



2007-06-23 1254-0326PUS1.ST251
SEQUENCE LISTING

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HIWASA, Takaki
MATSUSHITA, Kazuyuki
OCHIAI, Takenori
NOMURA, Fumio

<120> DIAGNOSTIC KIT FOR SOLID CANCER AND MEDICAMENT FOR SOLID CANCER THERAPY

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<141> 2006-09-29

<150> JP 2004-095732

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260 265 270
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275 280 285
Ser Thr Pro Leu Leu Leu Gly Lys Lys Gly Ile Glu Lys Asn Leu Gly
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Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala Glu Lys
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Arg Ala Gln Glu Arg Leu Ala Thr Ala Leu Gln Lys Leu Glu Glu Ala
 65 70 75 80

Glu Lys Ala Ala Asp Glu Ser Glu Arg Gly Met Lys Val Ile Glu Asn
 Page 6

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Page 7

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 Asn Asn Lys Ala Ala Lys Thr Gln Leu Ala Val Cys Gln Gln Arg Ile
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 Lys Val Leu Ala Gln Asn Ser Gly Phe Asp Leu Gln Glu Thr Leu Val
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Lys Ile Gln Ala Glu His Ser Glu Ser Gly Gln Leu Val Gly Val Asp
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Met Arg Ser
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Leu Ser Pro Lys Ala Ala Thr Leu Ala Glu Arg Ser Ala Gly Leu Ala
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Page 17

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His His Val Glu Pro Leu Glu Arg Leu Glu Lys Leu Leu Thr Lys Glu
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Ala Gln Leu Phe Ala Cys Leu Leu Arg Leu Gly Thr Gln Gln Val Gly
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ccc ctt cag ctg cac acc ggg gcc agc cat gcg gcc agg aac cat tat      208
Pro Leu Gln Leu His Thr Gly Ala Ser His Ala Ala Arg Asn His Tyr
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Glu Val Leu Val Leu Gly Gly Gly Ser Gly Gly Ile Thr Met Ala Ala

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gcc aaa caa ttg tcc tca tct ggt cgt ccc acg gca agt gtg att cca	Ala Lys Gln Leu Ser Ser Ser Gly Arg Pro Thr Ala Ser Val Ile Pro	400		
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240	245	250		
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270	275	280		
caa gtg att tca tat gaa atg ctt cat gtc aca cct cca atg agc cca	Gln Val Ile Ser Tyr Glu Met Leu His Val Thr Pro Pro Met Ser Pro	976		
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Val Ala Ala Gln Ser Gly Ile Leu Asp Arg Thr Ile Ser Val Ile Met
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Lys Asn Gln Thr Pro Thr Lys Lys Tyr Asp Gly Tyr Thr Ser Cys Pro
365 370 375

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Lys Tyr Ala Asp Ala Leu Gln Glu Ile Ile Gln Glu Arg Asn Leu Thr
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Val Asn Tyr Lys Lys Asn Leu Ile Glu Val Arg Ala Asp Lys Gln Glu
260 265 270

Ala Val Phe Glu Asn Leu Asp Lys Pro Gly Glu Thr Gln Val Ile Ser
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Tyr Glu Met Leu His Val Thr Pro Pro Met Ser Pro Pro Asp Val Leu
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Lys Thr Ser Pro Val Ala Asp Ala Ala Gly Trp Val Asp Val Asp Lys
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Cys Thr Asn Leu Pro Thr Ser Lys Thr Ala Ala Ala Val Ala Ala Gln
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Ser Gly Ile Leu Asp Arg Thr Ile Ser Val Ile Met Lys Asn Gln Thr
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Pro Thr Lys Lys Tyr Asp Gly Tyr Thr Ser Cys Pro Leu Val Thr Gly
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Tyr Asn Arg Val Ile Leu Ala Glu Phe Asp Tyr Lys Ala Glu Pro Leu
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Glu Thr Phe Pro Phe Asp Gln Ser Lys Glu Arg Leu Ser Met Tyr Leu
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Met Lys Ala Asp Leu Met Pro Phe Leu Tyr Trp Asn Met Met Leu Arg
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aag aca gcc ctg gat gct ttt gga aga ata gat gtt gtg gtc aac aat Lys Thr Ala Leu Asp Ala Phe Gly Arg Ile Asp Val Val Val Asn Asn 85 90 95	345
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cgg gca gca tgg gaa cac atg aag aaa cag aag tat gga agg att att Arg Ala Ala Trp Glu His Met Lys Lys Gln Lys Tyr Gly Arg Ile Ile 135 140 145	489
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260	265	270	275		
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acg gaa ctg gaa gct att atg tat gcc ctt gga gtg gga gcg tca atc	Thr Glu Leu Glu Ala Ile Met Tyr Ala Leu Gly Val Gly Ala Ser Ile	340	345	350	1113
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gtt ctt cat gga gag cag tac tta gag tta tat aaa cca ctt ccc aga	Val Leu His Gly Glu Gln Tyr Leu Glu Leu Tyr Lys Pro Leu Pro Arg	405	410	415	1305
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aat cag gct gct ttg tac cgc ctc agt gga gac tgg aat ccc tta cac	Asn Gln Ala Ala Leu Tyr Arg Leu Ser Gly Asp Trp Asn Pro Leu His	500	505	510	1593
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cat	gga	tta	tgt	aca	ttt	gga	ttt	tct	gcc	agg	cgt	gtg	tta	cag	cag	1689
His	Gly	Leu	Cys	Thr	Phe	Gly	Phe	Ser	Ala	Arg	Arg	Val	Leu	Gln	Gln	
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Phe	Ala	Asp	Asn	Asp	Val	Ser	Arg	Phe	Lys	Ala	Ile	Lys	Ala	Arg	Phe	
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Ala	Lys	Pro	Val	Tyr	Pro	Gly	Gln	Thr	Leu	Gln	Thr	Glu	Met	Trp	Lys	
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gaa	gga	aac	aga	att	cat	ttt	caa	acc	aag	gtc	caa	gaa	act	gga	gac	1833
Glu	Gly	Asn	Arg	Ile	His	Phe	Gln	Thr	Lys	Val	Gln	Glu	Thr	Gly	Asp	
	580				585					590					595	
att	gtc	att	tca	aat	gca	tat	gtg	gat	ctt	gca	cca	aca	tct	ggt	act	1881
Ile	Val	Ile	Ser	Asn	Ala	Tyr	Val	Asp	Leu	Ala	Pro	Thr	Ser	Gly	Thr	
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Phe	Glu	Glu	Ile	Gly	Arg	Arg	Leu	Lys	Asp	Ile	Gly	Pro	Glu	Val	Val	
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Tyr	Gln	Gly	Pro	Ala	Lys	Gly	Ala	Ala	Asp	Thr	Thr	Ile	Ile	Leu	Ser	
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Asp	Glu	Asp	Phe	Met	Glu	Val	Val	Leu	Gly	Lys	Leu	Asp	Pro	Gln	Lys	
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Ala	Phe	Phe	Ser	Gly	Arg	Leu	Lys	Ala	Arg	Gly	Asn	Ile	Met	Leu	Ser	
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Ala Pro Asn Ala Gly Ser Arg Met Thr Gln Thr Val Met Pro Glu Asp
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Pro Gln Lys Ala Phe Phe Ser Gly Arg Leu Lys Ala Arg Gly Asn Ile
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 Page 34

35

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Page 48

740

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Thr Gln Ser Leu Ser Met Pro Ala Ser Leu Gly Arg Met Asn Gln Gly
 35 40 45

Thr Ala Arg Leu Ala Ser Leu Met Asn Leu Gly Met Ser Ser Ser Leu
 50 55 60

Asn Gln Gln Gly Ala His Ser Ala Leu Ser Ser Ala Ser Thr Ser Ser
65 70 75 80

His Asn Leu Gln Ser Ile Phe Asn Ile Gly Ser Arg Gly Pro Leu Pro
85 90 95

Leu Ser Ser Gln His Arg Gly Asp Ala Asp Gln Ala Ser Asn Ile Leu
100 105 110

Ala Ser Phe Gly Leu Ser Ala Arg Asp Leu Asp Glu Leu Ser Arg Tyr
115 120 125

Pro Glu Asp Lys Ile Thr Pro Glu Asn Leu Pro Gln Ile Leu Leu Gln
130 135 140

Leu Lys Arg Arg Arg Thr Glu Glu Gly Pro Thr Leu Ser Tyr Gly Arg
145 150 155 160

Asp Gly Arg Ser Ala Thr Arg Glu Pro Pro Tyr Arg Val Pro Arg Asp
165 170 175

Asp Trp Glu Glu Lys Arg His Phe Arg Arg Asp Ser Phe Asp Asp Arg
180 185 190

Gly Pro Ser Leu Asn Pro Val Leu Asp Tyr Asp His Gly Ser Arg Ser
195 200 205

Gln Glu Ser Gly Tyr Tyr Asp Arg Met Asp Tyr Glu Asp Asp Arg Leu
210 215 220

Arg Asp Gly Glu Arg Cys Arg Asp Asp Ser Phe Phe Gly Glu Thr Ser
225 230 235 240

His Asn Tyr His Lys Phe Asp Ser Glu Tyr Glu Arg Met Gly Arg Gly
245 250 255

Pro Gly Pro Leu Gln Glu Arg Ser Leu Phe Glu Lys Lys Arg Gly Ala
260 265 270

Pro Pro Ser Ser Asn Ile Glu Asp Phe His Gly Leu Leu Pro Lys Gly
275 280 285

Tyr Pro His Leu Cys Ser Ile Cys Asp Leu Pro Val His Ser Asn Lys
290 295 300

Glu Trp Ser Gln His Ile Asn Gly Ala Ser His Ser Arg Arg Cys Gln
305 310 315 320

Leu Leu Leu Glu Ile Tyr Pro Glu Trp Asn Pro Asp Asn Asp Thr Gly
 325 330 335

His Thr Met Gly Asp Pro Phe Met Leu Gln Gln Ser Thr Asn Pro Ala
 340 345 350

Pro Gly Ile Leu Gly Pro Pro Pro Ser Phe His Leu Gly Gly Pro
 355 360 365

Ala Val Gly Pro Arg Gly Asn Leu Gly Ala Gly Asn Gly Asn Leu Gln
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Gly Pro Arg His Met Gln Lys Gly Arg Val Glu Thr Ser Arg Val Val
 385 390 395 400

His Ile Met Asp Phe Gln Arg Gly Lys Asn Leu Arg Tyr Gln Leu Leu
 405 410 415

Gln Leu Val Glu Pro Phe Gly Val Ile Ser Asn His Leu Ile Leu Asn
 420 425 430

Lys Ile Asn Glu Ala Phe Ile Glu Met Ala Thr Thr Glu Asp Ala Gln
 435 440 445

Ala Ala Val Asp Tyr Tyr Thr Thr Thr Pro Ala Leu Val Phe Gly Lys
 450 455 460

Pro Val Arg Val His Leu Ser Gln Lys Tyr Lys Arg Ile Lys Lys Pro
 465 470 475 480

Glu Gly Lys Pro Asp Gln Lys Phe Asp Gln Lys Gln Glu Leu Gly Arg
 485 490 495

Val Ile His Leu Ser Asn Leu Pro His Ser Gly Tyr Ser Asp Ser Ala
 500 505 510

Val Leu Lys Leu Ala Glu Pro Tyr Gly Lys Ile Lys Asn Tyr Ile Leu
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Met Arg Met Lys Ser Gln Ala Phe Ile Glu Met Glu Thr Arg Glu Asp
 530 535 540

Ala Met Ala Met Val Asp His Cys Leu Lys Lys Ala Leu Trp Phe Gln
 545 550 555 560

Gly Arg Cys Val Lys Val Asp Leu Ser Glu Lys Tyr Lys Lys Leu Val
 Page 55

565

570

575

Leu Arg Ile Pro Asn Arg Gly Ile Asp Leu Leu Lys Lys Asp Lys Ser
580 585 590

Arg Lys Arg Ser Tyr Ser Pro Asp Gly Lys Glu Ser Pro Ser Asp Lys
595 600 605

Lys Ser Lys Thr Asp Gly Ser Gln Lys Thr Glu Ser Ser Thr Glu Gly
610 615 620

Lys Glu Gln Glu Glu Lys Ser Gly Glu Asp Gly Glu Lys Asp Thr Lys
625 630 635 640

Asp Asp Gln Thr Glu Gln Glu Pro Asn Met Leu Leu Glu Ser Glu Asp
645 650 655

Glu Leu Leu Val Asp Glu Glu Glu Ala Ala Ala Leu Leu Glu Ser Gly
660 665 670

Ser Ser Val Gly Asp Glu Thr Asp Leu Ala Asn Leu Gly Asp Val Ala
675 680 685

Ser Asp Gly Lys Lys Glu Pro Ser Asp Lys Ala Val Lys Lys Asp Gly
690 695 700

Ser Ala Ser Ala Ala Ala Lys Lys Lys Leu Lys Lys Val Asp Lys Ile
705 710 715 720

Glu Glu Leu Asp Gln Glu Asn Glu Ala Ala Leu Glu Asn Gly Ile Lys
725 730 735

Asn Glu Glu Asn Thr Glu Pro Gly Ala Glu Ser Ser Glu Asn Ala Asp
740 745 750

Asp Pro Asn Lys Asp Thr Ser Glu Asn Ala Asp Gly Gln Ser Asp Glu
755 760 765

Asn Lys Asp Asp Tyr Thr Ile Pro Asp Glu Tyr Arg Ile Gly Pro Tyr
770 775 780

Gln Pro Asn Val Pro Val Gly Ile Asp Tyr Val Ile Pro Lys Thr Gly
785 790 795 800

Phe Tyr Cys Lys Leu Cys Ser Leu Phe Tyr Thr Asn Glu Glu Val Ala
805 810 815

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 Ile Trp Val Gly His Arg Gly Thr Val Arg Asp Tyr Pro Asp Phe Ser
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cca tca gtg gat gct gaa gct att cag aaa gca atc aga gga att gga 151
 Pro Ser Val Asp Ala Glu Ala Ile Gln Lys Ala Ile Arg Gly Ile Gly
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act gat gag aaa atg ctc atc agc att ctg act gag agg tca aat gca 199
 Thr Asp Glu Lys Met Leu Ile Ser Ile Leu Thr Glu Arg Ser Asn Ala
 40 45 50

cag cgg cag ctg att gtt aag gaa tat caa gca gca tat gga aag gag 247
 Gln Arg Gln Leu Ile Val Lys Glu Tyr Gln Ala Ala Tyr Gly Lys Glu
 55 60 65

ctg aaa gat gac ttg aag ggt gat ctc tct ggc cac ttt gag cat ctc 295
 Leu Lys Asp Asp Leu Lys Gly Asp Leu Ser Gly His Phe Glu His Leu
 70 75 80

atg gtg gcc cta gtg act cca cca gca gtc ttt gat gca aag cag cta 343
 Met Val Ala Leu Val Thr Pro Pro Ala Val Phe Asp Ala Lys Gln Leu
 85 90 95

aag aaa tcc atg aag ggc gcg gga aca aac gaa gat gcc ttg att gaa 391
 Lys Lys Ser Met Lys Gly Ala Gly Thr Asn Glu Asp Ala Leu Ile Glu
 100 105 110 115

atc tta act acc agg aca agc agg caa atg aag gat atc tct caa gcc 439
 Ile Leu Thr Thr Arg Thr Ser Arg Gln Met Lys Asp Ile Ser Gln Ala
 120 125 130

tat tat aca gta tac aag aag agt ctt gga gat gac att agt tcc gaa 487
 Tyr Tyr Thr Val Tyr Lys Lys Ser Leu Gly Asp Asp Ile Ser Ser Glu
 135 140 145

aca tct ggt gac ttc cgg aaa gct ctg ttg act ttg gca gat ggc aga 535
 Thr Ser Gly Asp Phe Arg Lys Ala Leu Leu Thr Leu Ala Asp Gly Arg
 150 155 160

aga gat gaa agt ctg aaa gtg gat gag cat ctg gcc aaa caa gat gcc 583
 Arg Asp Glu Ser Leu Lys Val Asp Glu His Leu Ala Lys Gln Asp Ala
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cag att ctc tat aaa gct ggt gag aac aga tgg ggc acg gat gaa gac 631
 Gln Ile Leu Tyr Lys Ala Gly Glu Asn Arg Trp Gly Thr Asp Glu Asp
 180 185 190 195

aaa ttc act gag atc ctg tgt tta agg agc ttt cct caa tta aaa cta 679
 Lys Phe Thr Glu Ile Leu Cys Leu Arg Ser Phe Pro Gln Leu Lys Leu
 200 205 210

aca ttt gat gaa tac aga aat atc agc caa aag gac att gtg gac agc 727
 Thr Phe Asp Glu Tyr Arg Asn Ile Ser Gln Lys Asp Ile Val Asp Ser
 215 220 225

ata aaa gga gaa tta tct ggg cat ttt gaa gac tta ctg ttg gcc ata 775
 Ile Lys Gly Glu Leu Ser Gly His Phe Glu Asp Leu Leu Leu Ala Ile
 230 235 240

gtt aat tgt gtg agg aac acg ccg gcc ttt tta gcc gaa aga ctg cat 823
 Val Asn Cys Val Arg Asn Thr Pro Ala Phe Leu Ala Glu Arg Leu His
 245 250 255

cga gcc ttg aag ggt att gga act gat gag ttt act ctg aac cga ata 871
 Arg Ala Leu Lys Gly Ile Gly Thr Asp Glu Phe Thr Leu Asn Arg Ile
 260 265 270 275

atg gtg tcc aga tca gaa att gac ctt ttg gac att cga aca gag ttc 919
 Met Val Ser Arg Ser Glu Ile Asp Leu Leu Asp Ile Arg Thr Glu Phe
 280 285 290

aag aag cat tat ggc tat tcc cta tat tca gca att aaa tcg gat act 967
 Lys Lys His Tyr Gly Tyr Ser Leu Tyr Ser Ala Ile Lys Ser Asp Thr
 295 300 305

tct gga gac tat gaa atc aca ctc tta aaa atc tgt ggt gga gat gac 1015
 Ser Gly Asp Tyr Glu Ile Thr Leu Leu Lys Ile Cys Gly Gly Asp Asp
 310 315 320

tga accaagaaga taatctccaa aggtccacga tgggctttcc caacagctcc 1068

accttacttc ttctcatact atttaagaga acaagcaaat ataaacagca acttgtgttc 1128

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 Ser Asn Ala Gln Arg Gln Leu Ile Val Lys Glu Tyr Gln Ala Ala Tyr
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 Gly Lys Glu Leu Lys Asp Asp Leu Lys Gly Asp Leu Ser Gly His Phe
 65 70 75 80
 Glu His Leu Met Val Ala Leu Val Thr Pro Pro Ala Val Phe Asp Ala
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 Lys Gln Leu Lys Lys Ser Met Lys Gly Ala Gly Thr Asn Glu Asp Ala
 100 105 110
 Leu Ile Glu Ile Leu Thr Thr Arg Thr Ser Arg Gln Met Lys Asp Ile
 115 120 125
 Ser Gln Ala Tyr Tyr Thr Val Tyr Lys Lys Ser Leu Gly Asp Asp Ile
 130 135 140
 Ser Ser Glu Thr Ser Gly Asp Phe Arg Lys Ala Leu Leu Thr Leu Ala
 145 150 155 160
 Asp Gly Arg Arg Asp Glu Ser Leu Lys Val Asp Glu His Leu Ala Lys
 165 170 175
 Gln Asp Ala Gln Ile Leu Tyr Lys Ala Gly Glu Asn Arg Trp Gly Thr
 180 185 190
 Asp Glu Asp Lys Phe Thr Glu Ile Leu Cys Leu Arg Ser Phe Pro Gln
 195 200 205
 Leu Lys Leu Thr Phe Asp Glu Tyr Arg Asn Ile Ser Gln Lys Asp Ile
 210 215 220
 Val Asp Ser Ile Lys Gly Glu Leu Ser Gly His Phe Glu Asp Leu Leu
 225 230 235 240
 Leu Ala Ile Val Asn Cys Val Arg Asn Thr Pro Ala Phe Leu Ala Glu
 245 250 255
 Arg Leu His Arg Ala Leu Lys Gly Ile Gly Thr Asp Glu Phe Thr Leu
 260 265 270

11

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aaa cac ctg tcg tcc tgt gcg gca cct gcc ccg ctg acc tcg gct gag			604
Lys His Leu Ser Ser Cys Ala Ala Pro Ala Pro Leu Thr Ser Ala Glu			
	140	145	150
aga gag ctc cag cag atc cgc att aac gag gtg aag aca gag atc agt			652
Arg Glu Leu Gln Gln Ile Arg Ile Asn Glu Val Lys Thr Glu Ile Ser			
	155	160	165
gtg gaa agc aag cac cag acc ctg cag ggc ctc gcc ttc ccc ctg cag			700
Val Glu Ser Lys His Gln Thr Leu Gln Gly Leu Ala Phe Pro Leu Gln			
	170	175	180
cct gag gcc cag cgg gca ctc cag cag ctc aag cag aaa atg gtc aac			748
Pro Glu Ala Gln Arg Ala Leu Gln Gln Leu Lys Gln Lys Met Val Asn			
	185	190	195
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Tyr Ile Gln Met Lys Leu Asp Leu Glu Arg Glu Thr Ile Glu Leu Val			
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cac aca gag ccc acg gat gtg gcc cag ctg ccc tcc cgg gtg ccc cga			844
His Thr Glu Pro Thr Asp Val Ala Gln Leu Pro Ser Arg Val Pro Arg			
	220	225	230
gat gct gcc cgc tac cac ttc ttc ctc tac aag cac acc cat gag ggc			892
Asp Ala Ala Arg Tyr His Phe Phe Leu Tyr Lys His Thr His Glu Gly			
	235	240	245
gac ccc ctt gag tct gta gtg ttc atc tac tcc atg ccg ggg tac aag			940
Asp Pro Leu Glu Ser Val Val Phe Ile Tyr Ser Met Pro Gly Tyr Lys			
	250	255	260
tgc agc atc aag gag cga atg ctc tac tcc agc tgc aag agc cgc ctc			988
Cys Ser Ile Lys Glu Arg Met Leu Tyr Ser Ser Cys Lys Ser Arg Leu			
	265	270	275
ctc gac tcc gtg gag cag gac ttc cat ctg gag atc gcc aag aaa att			1036
Leu Asp Ser Val Glu Gln Asp Phe His Leu Glu Ile Ala Lys Lys Ile			
	280	285	290
gag att ggc gat ggg gca gag ctg acg gca gag ttc ctc tac gac gag			1084
Glu Ile Gly Asp Gly Ala Glu Leu Thr Ala Glu Phe Leu Tyr Asp Glu			
	300	305	310
gtg cac ccc aag caa cac gcc ttc aag cag gcc ttc gcc aag ccc aag			1132
Val His Pro Lys Gln His Ala Phe Lys Gln Ala Phe Ala Lys Pro Lys			
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ggc cca ggg ggc aag cgg ggc cat aag cgc ctc atc cgc ggc ccg ggt			1180
Gly Pro Gly Gly Lys Arg Gly His Lys Arg Leu Ile Arg Gly Pro Gly			
	330	335	340
gaa aat ggg gat gac agc tag gagggctggag cagggccggc cacgtgtgga			1231
Glu Asn Gly Asp Asp Ser			
	345		
ctgtggggct gccaccttc cgctccctgc caccatcctc cttcctgggc tccaggaaag			1291

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Glu Asp Glu Gln Leu Val Leu Gly Ala Ser Gln Glu Pro Val Gly Arg
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Trp Asp Gln Asp Tyr Asp Arg Ala Val Leu Pro Leu Leu Asp Ala Gln
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Gln Pro Cys Tyr Leu Leu Tyr Arg Leu Asp Ser Gln Asn Ala Gln Gly
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Phe Glu Trp Leu Phe Leu Ala Trp Ser Pro Asp Asn Ser Pro Val Arg
          85          90          95

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Leu Lys Met Leu Tyr Ala Ala Thr Arg Ala Thr Val Lys Lys Glu Phe
          100          105          110

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Gly Gly Gly His Ile Lys Asp Glu Leu Phe Gly Thr Val Lys Asp Asp
          115          120          125

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Leu Ser Phe Ala Gly Tyr Gln Lys His Leu Ser Ser Cys Ala Ala Pro
          130          135          140

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Ala Pro Leu Thr Ser Ala Glu Arg Glu Leu Gln Gln Ile Arg Ile Asn
          145          150          155          160

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Glu Val Lys Thr Glu Ile Ser Val Glu Ser Lys His Gln Thr Leu Gln
165 170 175

Gly Leu Ala Phe Pro Leu Gln Pro Glu Ala Gln Arg Ala Leu Gln Gln
180 185 190

Leu Lys Gln Lys Met Val Asn Tyr Ile Gln Met Lys Leu Asp Leu Glu
195 200 205

Arg Glu Thr Ile Glu Leu Val His Thr Glu Pro Thr Asp Val Ala Gln
210 215 220

Leu Pro Ser Arg Val Pro Arg Asp Ala Ala Arg Tyr His Phe Phe Leu
225 230 235 240

Tyr Lys His Thr His Glu Gly Asp Pro Leu Glu Ser Val Val Phe Ile
245 250 255

Tyr Ser Met Pro Gly Tyr Lys Cys Ser Ile Lys Glu Arg Met Leu Tyr
260 265 270

Ser Ser Cys Lys Ser Arg Leu Leu Asp Ser Val Glu Gln Asp Phe His
275 280 285

Leu Glu Ile Ala Lys Lys Ile Glu Ile Gly Asp Gly Ala Glu Leu Thr
290 295 300

Ala Glu Phe Leu Tyr Asp Glu Val His Pro Lys Gln His Ala Phe Lys
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Gln Ala Phe Ala Lys Pro Lys Gly Pro Gly Gly Lys Arg Gly His Lys
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Arg Leu Ile Arg Gly Pro Gly Glu Asn Gly Asp Asp Ser
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Met Ser Gly Gly Gly Val Ile Arg

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cca gac atc cga acc aag gac att gag gac gtg ttc tac aaa tac ggc Pro Asp Ile Arg Thr Lys Asp Ile Glu Asp Val Phe Tyr Lys Tyr Gly 25 30 35 40	210
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 20 25 30

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 35 40 45

Asn Arg Arg Gly Gly Pro Pro Phe Ala Phe Val Glu Phe Glu Asp Pro
 50 55 60

Arg Asp Ala Glu Asp Ala Val Tyr Gly Arg Asp Gly Tyr Asp Tyr Asp
 65 70 75 80

Gly Tyr Arg Leu Arg Val Glu Phe Pro Arg Ser Gly Arg Gly Thr Gly
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Arg Gly Gly Gly Gly Gly Gly Gly Gly Ala Pro Arg Gly Arg Tyr
 100 105 110

Gly Pro Pro Ser Arg Arg Ser Glu Asn Arg Val Val Val Ser Gly Leu
 115 120 125

Pro Pro Ser Gly Ser Trp Gln Asp Leu Lys Asp His Met Arg Glu Ala
 130 135 140

Gly Asp Val Cys Tyr Ala Asp Val Tyr Arg Asp Gly Thr Gly Val Val
 145 150 155 160

Glu Phe Val Arg Lys Glu Asp Met Thr Tyr Ala Val Arg Lys Leu Asp
 165 170 175

Asn Thr Lys Phe Arg Ser His Glu Gly Glu Thr Ala Tyr Ile Arg Val
 180 185 190

Lys Val Asp Gly Pro Arg Ser Pro Ser Tyr Gly Arg Ser Arg Ser Arg
 195 200 205

Ser Arg Ser Arg Ser Arg Ser Arg Ser Arg Ser Asn Ser Arg Ser Arg
 Page 66

210

215

220

Ser Tyr Ser Pro Arg Arg Ser Arg Gly Ser Pro Arg Tyr Ser Pro Arg
 225 230 235 240

His Ser Arg Ser Arg Ser Arg Thr
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<210> 29
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 <212> DNA
 <213> Homo sapiens

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 Met Val His Gln Val Leu Tyr Arg Ala Leu Val Ser Thr
 1 5 10
 aag tgg ctg gcg gag tcc atc agg act ggc aag ctg ggg ccc ggc ctg 159
 Lys Trp Leu Ala Glu Ser Ile Arg Thr Gly Lys Leu Gly Pro Gly Leu
 15 20 25
 cgg gtg ctg gac gcg tcc tgg tac tca cca ggc acc cga gag gcc cgc 207
 Arg Val Leu Asp Ala Ser Trp Tyr Ser Pro Gly Thr Arg Glu Ala Arg
 30 35 40 45
 aag gag tac ctc gag cgc cac gta ccc ggc gcc tct ttc ttt gac ata 255
 Lys Glu Tyr Leu Glu Arg His Val Pro Gly Ala Ser Phe Phe Asp Ile
 50 55 60
 gaa gag tgc cgg gac acg gcg tcg ccc tac gag atg atg ctg ccc agc 303
 Glu Glu Cys Arg Asp Thr Ala Ser Pro Tyr Glu Met Met Leu Pro Ser
 65 70 75
 gag gct ggc ttc gcc gag tat gtg ggc cgc ctg ggc atc agc aac cac 351
 Glu Ala Gly Phe Ala Glu Tyr Val Gly Arg Leu Gly Ile Ser Asn His
 80 85 90
 acg cac gtg gtg gtg tat gat ggt gaa cac ctg ggc agc ttc tat gct 399
 Thr His Val Val Val Tyr Asp Gly Glu His Leu Gly Ser Phe Tyr Ala
 95 100 105
 ccc cgg gtc tgg tgg atg ttc cgt gtg ttt ggc cac cgc acc gta tca 447
 Pro Arg Val Trp Trp Met Phe Arg Val Phe Gly His Arg Thr Val Ser
 110 115 120 125
 gtg ctc aat ggt ggc ttc cgg aac tgg ctg aag gag ggc cac ccg gtg 495
 Val Leu Asn Gly Gly Phe Arg Asn Trp Leu Lys Glu Gly His Pro Val
 130 135 140
 aca tcc gag ccc tca cgc cca gaa ccg gcc gtc ttc aaa gcc aca ctg 543
 Thr Ser Glu Pro Ser Arg Pro Glu Pro Ala Val Phe Lys Ala Thr Leu
 145 150 155

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Asp Arg Ser Leu Leu Lys Thr Tyr Glu Gln Val Leu Glu Asn Leu Glu
160 165 170

tct aag agg ttc cag ctg gtg gat tca agg tct caa ggg cgg ttc ctg      639
Ser Lys Arg Phe Gln Leu Val Asp Ser Arg Ser Gln Gly Arg Phe Leu
175 180 185

ggc acc gag ccg gag ccg gat gca gta gga ctg gac tcg ggc cat atc      687
Gly Thr Glu Pro Glu Pro Asp Ala Val Gly Leu Asp Ser Gly His Ile
190 195 200 205

cgt ggt gcc gtc aac atg cct ttc atg gac ttc ctg act gag gat ggc      735
Arg Gly Ala Val Asn Met Pro Phe Met Asp Phe Leu Thr Glu Asp Gly
210 215 220

ttc gag aag ggc cca gaa gag ctc cgt gct ctg ttc cag acc aag aag      783
Phe Glu Lys Gly Pro Glu Glu Leu Arg Ala Leu Phe Gln Thr Lys Lys
225 230 235

gtg gat ctc tcg cag cct ctc att gcc acg tgc cgc aag gga gtc acc      831
Val Asp Leu Ser Gln Pro Leu Ile Ala Thr Cys Arg Lys Gly Val Thr
240 245 250

gcc tgc cac gtg gcc ttg gct gcc tac ctc tgc ggc aag cct gat gtg      879
Ala Cys His Val Ala Leu Ala Tyr Leu Cys Gly Lys Pro Asp Val
255 260 265

gcc gtg tac gat ggc tcc tgg tcc gag tgg ttt cgc cgg gcc ccc cca      927
Ala Val Tyr Asp Gly Ser Trp Ser Glu Trp Phe Arg Arg Ala Pro Pro
270 275 280 285

gag agc cgt gtg tcc cag gga aag tct gag aag gcc tga gccgtgacct      976
Glu Ser Arg Val Ser Gln Gly Lys Ser Glu Lys Ala
290 295

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ctcttaggtg aaggagatga catgttttta gaattgctgt gcaaggctca ccctctctct 1096
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20 25 30
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Asp Ala Ser Trp Tyr Ser Pro Gly Thr Arg Glu Ala Arg Lys Glu Tyr
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Leu Glu Arg His Val Pro Gly Ala Ser Phe Phe Asp Ile Glu Glu Cys
50 55 60

Arg Asp Thr Ala Ser Pro Tyr Glu Met Met Leu Pro Ser Glu Ala Gly
65 70 75 80

Phe Ala Glu Tyr Val Gly Arg Leu Gly Ile Ser Asn His Thr His Val
85 90 95

Val Val Tyr Asp Gly Glu His Leu Gly Ser Phe Tyr Ala Pro Arg Val
100 105 110

Trp Trp Met Phe Arg Val Phe Gly His Arg Thr Val Ser Val Leu Asn
115 120 125

Gly Gly Phe Arg Asn Trp Leu Lys Glu Gly His Pro Val Thr Ser Glu
130 135 140

Pro Ser Arg Pro Glu Pro Ala Val Phe Lys Ala Thr Leu Asp Arg Ser
145 150 155 160

Leu Leu Lys Thr Tyr Glu Gln Val Leu Glu Asn Leu Glu Ser Lys Arg
165 170 175

Phe Gln Leu Val Asp Ser Arg Ser Gln Gly Arg Phe Leu Gly Thr Glu
180 185 190

Pro Glu Pro Asp Ala Val Gly Leu Asp Ser Gly His Ile Arg Gly Ala
195 200 205

Val Asn Met Pro Phe Met Asp Phe Leu Thr Glu Asp Gly Phe Glu Lys
210 215 220

Gly Pro Glu Glu Leu Arg Ala Leu Phe Gln Thr Lys Lys Val Asp Leu
225 230 235 240

Ser Gln Pro Leu Ile Ala Thr Cys Arg Lys Gly Val Thr Ala Cys His
245 250 255

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260 265 270

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275 280 285

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Lys Ala Leu Asp Ile Ala Glu Asn Glu Met Pro Gly Leu Met Arg Met
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 Arg Glu Arg Tyr Ser Ala Ser Lys Pro Leu Lys Gly Ala Arg Ile Ala
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Gly Cys Leu His Met Thr Val Glu Thr Ala Val Leu Ile Glu Thr Leu
55 60 65

gtc acc ctg ggt gct gag gtg cag tgg tcc agc tgc aac atc ttc tcc 296
Val Thr Leu Gly Ala Glu Val Gln Trp Ser Ser Cys Asn Ile Phe Ser
70 75 80

acc cag gac cat gcg gcg gct gcc att gcc aag gct ggc att ccg gtg 344
Thr Gln Asp His Ala Ala Ala Ile Ala Lys Ala Gly Ile Pro Val
85 90 95

tat gcc tgg aag ggc gaa acg gac gag gag tac ctg tgg tgc att gag 392
Tyr Ala Trp Lys Gly Glu Thr Asp Glu Glu Tyr Leu Trp Cys Ile Glu
100 105 110 115

cag	acc	ctg	tac	ttc	aag	gac	ggg	ccc	ctc	aac	atg	att	ctg	gac	gac	440
Gln	Thr	Leu	Tyr	Phe	Lys	Asp	Gly	Pro	Leu	Asn	Met	Ile	Leu	Asp	Asp	
				120					125					130		

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Gly Gly Asp Leu Thr Asn Leu Ile His Thr Lys Tyr Pro Gln Leu Leu
135 140 145

cca ggc atc cga ggc atc tct gag gag acc acg act ggg gtc cac aac 536
Pro Gly Ile Arg Gly Ile Ser Glu Glu Thr Thr Thr Gly Val His Asn
150 155 160

ctc tac aag atg atg gcc aat ggg atc ctc aag gtg cct gcc atc aat 584
Leu Tyr Lys Met Met Ala Asn Gly Ile Leu Lys Val Pro Ala Ile Asn
165 170 175

gtc aat gac tcc gtc acc aag agc aag ttt gac aac ctc tat ggc tgc 632
Page 70

Val 180	Asn	Asp	Ser	Val	Thr 185	Lys	Ser	Lys	Phe	Asp 190	Asn	Leu	Tyr	Gly	Cys 195	
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Ala	Gly	Lys	Val 215	Ala	Val	Val	Ala	Gly 220	Tyr	Gly	Asp	Val	Gly 225	Lys	Gly	
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Cys	Ala	Gln 230	Ala	Leu	Arg	Gly	Phe 235	Gly	Ala	Arg	Val	Ile 240	Ile	Thr	Glu	
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Ile	Asp 245	Pro	Ile	Asn	Ala	Leu 250	Gln	Ala	Ala	Met	Glu 255	Gly	Tyr	Glu	Val	
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Thr 260	Thr	Met	Asp	Glu	Ala 265	Cys	Gln	Glu	Gly	Asn 270	Ile	Phe	Val	Thr	Thr 275	
aca	ggc	tgt	att	gac	atc	atc	ctt	ggc	cgg	cac	ttt	gag	cag	atg	aag	920
Thr	Gly	Cys	Ile	Asp 280	Ile	Ile	Leu	Gly	Arg 285	His	Phe	Glu	Gln	Met 290	Lys	
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Asp	Asp	Ala	Ile 295	Val	Cys	Asn	Ile	Gly 300	His	Phe	Asp	Val	Glu 305	Ile	Asp	
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Val	Lys	Trp 310	Leu	Asn	Glu	Asn	Ala 315	Val	Glu	Lys	Val	Asn 320	Ile	Lys	Pro	
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Gln	Val 325	Asp	Arg	Tyr	Arg	Leu 330	Lys	Asn	Gly	Arg	Arg 335	Ile	Ile	Leu	Leu	
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Ala	Glu	Gly	Arg	Leu	Val 345	Asn	Leu	Gly	Cys	Ala 350	Met	Gly	His	Pro	Ser 355	
ttc	gtg	atg	agt	aac	tcc	ttc	acc	aac	cag	gtg	atg	gcg	cag	atc	gag	1160
Phe	Val	Met	Ser	Asn 360	Ser	Phe	Thr	Asn	Gln 365	Val	Met	Ala	Gln	Ile 370	Glu	
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Lys	Lys	Leu 390	Asp	Glu	Ala	Val	Ala 395	Glu	Ala	His	Leu	Gly 400	Lys	Leu	Asn	
gtg	aag	ttg	acc	aag	cta	act	gag	aag	caa	gcc	cag	tac	ctg	ggc	atg	1304
Val	Lys 405	Leu	Thr	Lys	Leu	Thr 410	Glu	Lys	Gln	Ala	Gln 415	Tyr	Leu	Gly	Met	
tcc	tgt	gat	ggc	ccc	ttc	aag	ccg	gat	cac	tac	cgc	tac	tga			1346
Ser 420	Cys	Asp	Gly	Pro	Phe 425	Lys	Pro	Asp	His	Tyr 430	Arg	Tyr				

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<213> Homo sapiens

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20          25          30

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Met Arg Met Arg Glu Arg Tyr Ser Ala Ser Lys Pro Leu Lys Gly Ala
35          40          45

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Arg Ile Ala Gly Cys Leu His Met Thr Val Glu Thr Ala Val Leu Ile
50          55          60

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Glu Thr Leu Val Thr Leu Gly Ala Glu Val Gln Trp Ser Ser Cys Asn
65          70          75          80

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Ile Phe Ser Thr Gln Asp His Ala Ala Ala Ala Ile Ala Lys Ala Gly
85          90          95

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Ile Pro Val Tyr Ala Trp Lys Gly Glu Thr Asp Glu Glu Tyr Leu Trp
100         105         110

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Cys Ile Glu Gln Thr Leu Tyr Phe Lys Asp Gly Pro Leu Asn Met Ile

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115

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Leu Asp Asp Gly Gly Asp Leu Thr Asn Leu Ile His Thr Lys Tyr Pro
130      135      140

Gln Leu Leu Pro Gly Ile Arg Gly Ile Ser Glu Glu Thr Thr Thr Gly
145      150      155      160

Val His Asn Leu Tyr Lys Met Met Ala Asn Gly Ile Leu Lys Val Pro
165      170      175

Ala Ile Asn Val Asn Asp Ser Val Thr Lys Ser Lys Phe Asp Asn Leu
180      185      190

Tyr Gly Cys Arg Glu Ser Leu Ile Asp Gly Ile Lys Arg Ala Thr Asp
195      200      205

Val Met Ile Ala Gly Lys Val Ala Val Val Ala Gly Tyr Gly Asp Val
210      215      220

Gly Lys Gly Cys Ala Gln Ala Leu Arg Gly Phe Gly Ala Arg Val Ile
225      230      235      240

Ile Thr Glu Ile Asp Pro Ile Asn Ala Leu Gln Ala Ala Met Glu Gly
245      250      255

Tyr Glu Val Thr Thr Met Asp Glu Ala Cys Gln Glu Gly Asn Ile Phe
260      265      270

Val Thr Thr Thr Gly Cys Ile Asp Ile Ile Leu Gly Arg His Phe Glu
275      280      285

Gln Met Lys Asp Asp Ala Ile Val Cys Asn Ile Gly His Phe Asp Val
290      295      300

Glu Ile Asp Val Lys Trp Leu Asn Glu Asn Ala Val Glu Lys Val Asn
305      310      315      320

Ile Lys Pro Gln Val Asp Arg Tyr Arg Leu Lys Asn Gly Arg Arg Ile
325      330      335

Ile Leu Leu Ala Glu Gly Arg Leu Val Asn Leu Gly Cys Ala Met Gly
340      345      350

His Pro Ser Phe Val Met Ser Asn Ser Phe Thr Asn Gln Val Met Ala
355      360      365

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Phe Leu Pro Lys Lys Leu Asp Glu Ala Val Ala Glu Ala His Leu Gly
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ttcctgccgg caccgcgcct gccctctgcc gcgctccgcc ctgccgccga ccgcacgccc 180

gccgcgggac atg gca cac gca ccg gca cgc tgc ccc agc gcc cgg ggc 229
 Met Ala His Ala Pro Ala Arg Cys Pro Ser Ala Arg Gly
 1 5 10

tcc ggg gac ggc gag atg ggc aag ccc agg aac gtg gcg ctc atc acc 277
 Ser Gly Asp Gly Glu Met Gly Lys Pro Arg Asn Val Ala Leu Ile Thr
 15 20 25

ggt atc aca ggc cag gat ggt tcc tac ctg gct gag ttc ctg ctg gag 325
 Gly Ile Thr Gly Gln Asp Gly Ser Tyr Leu Ala Glu Phe Leu Leu Glu
 30 35 40 45

aaa ggc tat gag gtc cat gga att gta cgg cgg tcc agt tca ttt aat 373
 Lys Gly Tyr Glu Val His Gly Ile Val Arg Arg Ser Ser Ser Phe Asn
 50 55 60

acg ggt cga att gag cat ctg tat aag aat ccc cag gct cac att gaa 421
 Thr Gly Arg Ile Glu His Leu Tyr Lys Asn Pro Gln Ala His Ile Glu
 65 70 75

gga aac atg aag ttg cac tat ggc gat ctc act gac agt acc tgc ctt 469
 Gly Asn Met Lys Leu His Tyr Gly Asp Leu Thr Asp Ser Thr Cys Leu
 80 85 90

gtg aag atc att aat gaa gta aag ccc aca gag atc tac aac ctt gga 517
 Val Lys Ile Ile Asn Glu Val Lys Pro Thr Glu Ile Tyr Asn Leu Gly
 95 100 105

gcc cag agc cac gtc aaa att tcc ttt gac ctc gct gag tac act gcg 565
 Ala Gln Ser His Val Lys Ile Ser Phe Asp Leu Ala Glu Tyr Thr Ala

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tgt ggc ctt atc aac tct gtg aag ttc tac caa gcc tca aca agt gaa	661	Cys Gly Leu Ile 145	Asn Ser Val Lys 150	Phe Tyr Gln Ala Ser 155	Thr Ser Glu		
ctt tat ggg aaa gtg cag gaa ata ccc cag aag gag acc acc cct ttc	709	Leu Tyr Gly Lys Val 160	Gln Glu Ile 165	Pro Gln Lys Glu Thr 170	Thr Pro Phe		
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ctc ttc aat cat gag agt ccc aga aga gga gct aat ttc gtt act cga	853	Leu Phe Asn His Glu 210	Ser Pro Arg Arg Gly 215	Ala Asn Phe Val Thr 220	Arg		
aaa att agc cgg tca gta gct aag att tac ctt gga caa ctg gaa tgt	901	Lys Ile Ser Arg Ser 225	Val Ala Lys Ile 230	Tyr Leu Gly Gln Leu 235	Glu Cys		
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gct ttc gat gag ctg gtg agg gag atg gtg cac gcc gac gtg gag ctc	1285	Ala Phe Asp Glu Leu Val 350	Arg Glu Met Val His 355	Ala Asp Val Glu Leu 360	Leu 365		
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Met Arg Thr Asn Pro Asn Ala
370

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Gly Gln Asp Gly Ser Tyr Leu Ala Glu Phe Leu Leu Glu Lys Gly Tyr
35 40 45

Glu Val His Gly Ile Val Arg Arg Ser Ser Ser Phe Asn Thr Gly Arg
50 55 60

Ile Glu His Leu Tyr Lys Asn Pro Gln Ala His Ile Glu Gly Asn Met
65 70 75 80

Lys Leu His Tyr Gly Asp Leu Thr Asp Ser Thr Cys Leu Val Lys Ile
85 90 95

Ile Asn Glu Val Lys Pro Thr Glu Ile Tyr Asn Leu Gly Ala Gln Ser
100 105 110

His Val Lys Ile Ser Phe Asp Leu Ala Glu Tyr Thr Ala Asp Val Asp
115 120 125

Gly Val Gly Thr Leu Arg Leu Leu Asp Ala Val Lys Thr Cys Gly Leu
130 135 140

Ile Asn Ser Val Lys Phe Tyr Gln Ala Ser Thr Ser Glu Leu Tyr Gly
145 150 155 160

Lys Val Gln Glu Ile Pro Gln Lys Glu Thr Thr Pro Phe Tyr Pro Arg
 165 170 175

Ser Pro Tyr Gly Ala Ala Lys Leu Tyr Ala Tyr Trp Ile Val Val Asn
 180 185 190

Phe Arg Glu Ala Tyr Asn Leu Phe Ala Val Asn Gly Ile Leu Phe Asn
 195 200 205

His Glu Ser Pro Arg Arg Gly Ala Asn Phe Val Thr Arg Lys Ile Ser
 210 215 220

Arg Ser Val Ala Lys Ile Tyr Leu Gly Gln Leu Glu Cys Phe Ser Leu
 225 230 235 240

Gly Asn Leu Asp Ala Lys Arg Asp Trp Gly His Ala Lys Asp Tyr Val
 245 250 255

Glu Ala Met Trp Leu Met Leu Gln Asn Asp Glu Pro Glu Asp Phe Val
 260 265 270

Ile Ala Thr Gly Glu Val His Ser Val Arg Glu Phe Val Glu Lys Ser
 275 280 285

Phe Leu His Ile Gly Lys Thr Ile Val Trp Glu Gly Lys Asn Glu Asn
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Glu Val Gly Arg Cys Lys Glu Thr Gly Lys Val His Val Thr Val Asp
 305 310 315 320

Leu Lys Tyr Tyr Arg Pro Thr Glu Val Asp Phe Leu Gln Gly Asp Cys
 325 330 335

Thr Lys Ala Lys Gln Lys Leu Asn Trp Lys Pro Arg Val Ala Phe Asp
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Asn Pro Asn Ala
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Leu Ser Arg Phe Ser Ala Phe Arg Ile Leu Arg Ser Arg Gly Tyr Ile
10          15          20          25

tgc cgc aat ttt aca ggg tct tct gct ttg ctg acc aga acc cat att      148
Cys Arg Asn Phe Thr Gly Ser Ser Ala Leu Thr Arg Thr His Ile
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aac tat gga gtc aaa ggg gat gtg gca gtt gtt cga att aac tct ccc      196
Asn Tyr Gly Val Lys Gly Asp Val Ala Val Val Arg Ile Asn Ser Pro
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aat tca aag gta aat aca ctg agt aaa gag cta cat tca gag ttc tca      244
Asn Ser Lys Val Asn Thr Leu Ser Lys Glu Leu His Ser Glu Phe Ser
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gaa gtt atg aat gaa atc tgg gct agt gat caa atc aga agt gcc gtc      292
Glu Val Met Asn Glu Ile Trp Ala Ser Asp Gln Ile Arg Ser Ala Val
          75          80          85

ctt atc tca tca aag cca ggc tgc ttt att gca ggt gct gat atc aac      340
Leu Ile Ser Ser Lys Pro Gly Cys Phe Ile Ala Gly Ala Asp Ile Asn
90          95          100          105

atg tta gcc gct tgc aag acc ctt caa gaa gta aca cag cta tca caa      388
Met Leu Ala Ala Cys Lys Thr Leu Gln Glu Val Thr Gln Leu Ser Gln
          110          115          120

gaa gca cag aga ata gtt gag aaa ctt gaa aag tcc aca aag cct att      436
Glu Ala Gln Arg Ile Val Glu Lys Leu Glu Lys Ser Thr Lys Pro Ile
          125          130          135

gtg gct gcc atc aat gga tcc tgc ctg gga gga gga ctt gag gtt gcc      484
Val Ala Ala Ile Asn Gly Ser Cys Leu Gly Gly Gly Leu Glu Val Ala
          140          145          150

att tca tgc caa tac aga ata gca aca aaa gac aga aaa aca gta tta      532
Ile Ser Cys Gln Tyr Arg Ile Ala Thr Lys Asp Arg Lys Thr Val Leu
          155          160          165

ggg acc cct gaa gtt ttg ctg ggg gcc tta cca gga gca gga ggc aca      580
Gly Thr Pro Glu Val Leu Leu Gly Ala Leu Pro Gly Ala Gly Gly Thr
170          175          180          185

caa agg ctg ccc aaa atg gtg ggt gtg cct gct gct ttg gac atg atg      628
Gln Arg Leu Pro Lys Met Val Gly Val Pro Ala Ala Leu Asp Met Met
          190          195          200

ctg act ggt aga agc att cgt gca gac agg gca aag aaa atg gga ctg      676
Leu Thr Gly Arg Ser Ile Arg Ala Asp Arg Ala Lys Lys Met Gly Leu
          205          210          215

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Val Asp Gln Leu Val Glu Pro Leu Gly Pro Gly Leu Lys Pro Pro Glu
          220          225          230

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gaa Glu	cgg Arg 235	aca Thr	ata Ile	gaa Glu	tac Tyr	cta Leu 240	gaa Glu	gaa Glu	gtt Val	gca Ala 245	att Ile	act Thr	ttt Phe	gcc Ala	aaa Lys	772
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ctc Leu	act Thr 395	gcg Ala	cta Leu	gac Asp	cga Arg	gga Gly 400	cag Gln	caa Gln	caa Gln	gtg Val	ttc Phe 405	aaa Lys	gga Gly	ttg Leu	aat Asn	1252
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	605	610	615
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	635	640	645
tct gac atg gat agt att tta gcg agt ctg aag ctg cct cct aag tct	Ser Asp Met Asp Ser Ile Leu Ala Ser Leu Lys Leu Pro Pro Lys Ser	2020	
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	670	675	680
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	685	690	695
gca gag gga gac atc gga gcc gtc ttt ggg ctt ggc ttc ccg cct tgt	Ala Glu Gly Asp Ile Gly Ala Val Phe Gly Leu Gly Phe Pro Pro Cys	2164	
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Val Asp Arg Leu Lys Lys Tyr Glu Ala Ala Tyr Gly Lys Gln Phe Thr
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Pro Cys Gln Leu Leu Ala Asp His Ala Asn Ser Pro Asn Lys Lys Phe
          750          755          760

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Tyr Gln

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Ser Ala Leu Leu Thr Arg Thr His Ile Asn Tyr Gly Val Lys Gly Asp
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Val Ala Val Val Arg Ile Asn Ser Pro Asn Ser Lys Val Asn Thr Leu
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Ser Lys Glu Leu His Ser Glu Phe Ser Glu Val Met Asn Glu Ile Trp
65          70          75          80

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Ala Ser Asp Gln Ile Arg Ser Ala Val Leu Ile Ser Ser Lys Pro Gly
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Cys Phe Ile Ala Gly Ala Asp Ile Asn Met Leu Ala Ala Cys Lys Thr
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 115 120 125
 Lys Leu Glu Lys Ser Thr Lys Pro Ile Val Ala Ala Ile Asn Gly Ser
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 Cys Leu Gly Gly Gly Leu Glu Val Ala Ile Ser Cys Gln Tyr Arg Ile
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 Ala Thr Lys Asp Arg Lys Thr Val Leu Gly Thr Pro Glu Val Leu Leu
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 Gly Ala Leu Pro Gly Ala Gly Gly Thr Gln Arg Leu Pro Lys Met Val
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 Gly Val Pro Ala Ala Leu Asp Met Met Leu Thr Gly Arg Ser Ile Arg
 195 200 205
 Ala Asp Arg Ala Lys Lys Met Gly Leu Val Asp Gln Leu Val Glu Pro
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 Ser Pro Lys Arg Asp Lys Gly Leu Val Glu Lys Leu Thr Ala Tyr Ala
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 Met Thr Ile Pro Phe Val Arg Gln Gln Val Tyr Lys Lys Val Glu Glu
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 Ile Asp Val Val Lys Thr Gly Ile Glu Gln Gly Ser Asp Ala Gly Tyr
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 325 330 335
 Lys Ala Leu Met Gly Leu Tyr His Gly Gln Val Leu Cys Lys Lys Asn

340

345

350

Lys Phe Gly Ala Pro Gln Lys Asp Val Lys His Leu Ala Ile Leu Gly
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Ala Gly Leu Met Gly Ala Gly Ile Ala Gln Val Ser Val Asp Lys Gly
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Gln Gln Gln Val Phe Lys Gly Leu Asn Asp Lys Val Lys Lys Lys Ala
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Leu Asp Tyr Gln Gly Phe Glu Lys Ala Asp Met Val Ile Glu Ala Val
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Phe Glu Asp Leu Ser Leu Lys His Arg Val Leu Lys Glu Val Glu Ala
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Val Ile Pro Asp His Cys Ile Phe Ala Ser Asn Thr Ser Ala Leu Pro
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485 490 495

Met His Tyr Phe Ser Pro Val Asp Lys Met Gln Leu Leu Glu Ile Ile
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Thr Thr Glu Lys Thr Ser Lys Asp Thr Ser Ala Ser Ala Val Ala Val
515 520 525

Gly Leu Lys Gln Gly Lys Val Ile Ile Val Val Lys Asp Gly Pro Gly
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Phe Tyr Thr Thr Arg Cys Leu Ala Pro Met Met Ser Glu Val Ile Arg
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Ser Phe Gly Phe Pro Val Gly Ala Ala Thr Leu Val Asp Glu Val Gly
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Val Asp Val Ala Lys His Val Ala Glu Asp Leu Gly Lys Val Phe Gly
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Glu Arg Phe Gly Gly Gly Asn Pro Glu Leu Leu Thr Gln Met Val Ser
610 615 620

Lys Gly Phe Leu Gly Arg Lys Ser Gly Lys Gly Phe Tyr Ile Tyr Gln
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Glu Gly Val Lys Arg Lys Asp Leu Asn Ser Asp Met Asp Ser Ile Leu
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Ala Ser Leu Lys Leu Pro Pro Lys Ser Glu Val Ser Ser Asp Glu Asp
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675 680 685

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Val Phe Gly Leu Gly Phe Pro Pro Cys Leu Gly Gly Pro Phe Arg Phe
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Ala Leu Leu Cys Leu Ala Val Ala Ala Leu Val Arg Ala Asp Ala Pro
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Lys Glu Glu Cys Pro Ala Val Arg Leu Ile Thr Leu Glu Glu Glu Met	
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<210> 38
<211> 508
<212> PRT
<213> Homo sapiens

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1 5 10 15
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20 25 30
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```
Asn Phe Ala Glu Ala Leu Ala Ala His Lys Tyr Leu Leu Val Glu Phe
35 40 45
```

```
Tyr Ala Pro Trp Cys Gly His Cys Lys Ala Leu Ala Pro Glu Tyr Ala
50 55 60
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```
Lys Ala Ala Gly Lys Leu Lys Ala Glu Gly Ser Glu Ile Arg Leu Ala
65 70 75 80
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```
Lys Val Asp Ala Thr Glu Glu Ser Asp Leu Ala Gln Gln Tyr Gly Val
85 90 95
```

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Arg Gly Tyr Pro Thr Ile Lys Phe Phe Arg Asn Gly Asp Thr Ala Ser
100 105 110
```

Pro Lys Glu Tyr Thr Ala Gly Arg Glu Ala Asp Asp Ile Val Asn Trp
 115 120 125

Leu Lys Lys Arg Thr Gly Pro Ala Ala Thr Thr Leu Pro Asp Gly Ala
 130 135 140

Ala Ala Glu Ser Leu Val Glu Ser Ser Glu Val Ala Val Ile Gly Phe
 145 150 155 160

Phe Lys Asp Val Glu Ser Asp Ser Ala Lys Gln Phe Leu Gln Ala Ala
 165 170 175

Glu Ala Ile Asp Asp Ile Pro Phe Gly Ile Thr Ser Asn Ser Asp Val
 180 185 190

Phe Ser Lys Tyr Gln Leu Asp Lys Asp Gly Val Val Leu Phe Lys Lys
 195 200 205

Phe Asp Glu Gly Arg Asn Asn Phe Glu Gly Glu Val Thr Lys Glu Asn
 210 215 220

Leu Leu Asp Phe Ile Lys His Asn Gln Leu Pro Leu Val Ile Glu Phe
 225 230 235 240

Thr Glu Gln Thr Ala Pro Lys Ile Phe Gly Gly Glu Ile Lys Thr His
 245 250 255

Ile Leu Leu Phe Leu Pro Lys Ser Val Ser Asp Tyr Asp Gly Lys Leu
 260 265 270

Ser Asn Phe Lys Thr Ala Ala Glu Ser Phe Lys Gly Lys Ile Leu Phe
 275 280 285

Ile Phe Ile Asp Ser Asp His Thr Asp Asn Gln Arg Ile Leu Glu Phe
 290 295 300

Phe Gly Leu Lys Lys Glu Glu Cys Pro Ala Val Arg Leu Ile Thr Leu
 305 310 315 320

Glu Glu Glu Met Thr Lys Tyr Lys Pro Glu Ser Glu Glu Leu Thr Ala
 325 330 335

Glu Arg Ile Thr Glu Phe Cys His Arg Phe Leu Glu Gly Lys Ile Lys
 340 345 350

Pro His Leu Met Ser Gln Glu Leu Pro Glu Asp Trp Asp Lys Gln Pro
 355 360 365

Val Lys Val Leu Val Gly Lys Asn Phe Glu Asp Val Ala Phe Asp Glu
370 375 380

Lys Lys Asn Val Phe Val Glu Phe Tyr Ala Pro Trp Cys Gly His Cys
385 390 395 400

Lys Gln Leu Ala Pro Ile Trp Asp Lys Leu Gly Glu Thr Tyr Lys Asp
405 410 415

His Glu Asn Ile Val Ile Ala Lys Met Asp Ser Thr Ala Asn Glu Val
420 425 430

Glu Ala Val Lys Val His Ser Phe Pro Thr Leu Lys Phe Phe Pro Ala
435 440 445

Ser Ala Asp Arg Thr Val Ile Asp Tyr Asn Gly Glu Arg Thr Leu Asp
450 455 460

Gly Phe Lys Lys Phe Leu Glu Ser Gly Gly Gln Asp Gly Ala Gly Asp
465 470 475 480

Asp Asp Asp Leu Glu Asp Leu Glu Glu Ala Glu Glu Pro Asp Met Glu
485 490 495

Glu Asp Asp Asp Gln Lys Ala Val Lys Asp Glu Leu
500 505

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<213> Homo sapiens

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<222> (120)..(764)

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ccccgcctgc tgcggtggca ccagccagga ggcggagtgg aagtggccgt ggggcgggt 119

atg gga cta gct ggc gtg tgc gcc ctg aga cgc tca gcg ggc tat ata 167
Met Gly Leu Ala Gly Val Cys Ala Leu Arg Arg Ser Ala Gly Tyr Ile
1 5 10 15

ctc gtc ggt ggg gcc ggc ggt cag tct gcg gca gcg gca gca aga cgg 215
Leu Val Gly Gly Ala Gly Gly Gln Ser Ala Ala Ala Ala Ala Arg Arg
20 25 30

tgc agt gaa gga gag tgg gcg tct ggc ggg gtc cgc agt ttc agc aga 263
Cys Ser Glu Gly Glu Trp Ala Ser Gly Gly Val Arg Ser Phe Ser Arg
Page 89

35	40	45	
gcc gct gca gcc atg gcc cca atc aag gtg gga gat gcc atc cca gca			311
Ala Ala Ala Ala Met Ala Pro Ile Lys Val Gly Asp Ala Ile Pro Ala			
50	55	60	
gtg gag gtg ttt gaa ggg gag cca ggg aac aag gtg aac ctg gca gag			359
Val Glu Val Phe Glu Gly Glu Pro Gly Asn Lys Val Asn Leu Ala Glu			
65	70	75	80
ctg ttc aag ggc aag aag ggt gtg ctg ttt gga gtt cct ggg gcc ttc			407
Leu Phe Lys Gly Lys Lys Gly Val Leu Phe Gly Val Pro Gly Ala Phe			
85	90	95	
acc cct gga tgt tcc aag aca cac ctg cca ggg ttt gtg gag cag gct			455
Thr Pro Gly Cys Ser Lys Thr His Leu Pro Gly Phe Val Glu Gln Ala			
100	105	110	
gag gct ctg aag gcc aag gga gtc cag gtg gtg gcc tgt ctg agt gtt			503
Glu Ala Leu Lys Ala Lys Gly Val Gln Val Val Ala Cys Leu Ser Val			
115	120	125	
aat gat gcc ttt gtg act ggc gag tgg ggc cga gcc cac aag gcg gaa			551
Asn Asp Ala Phe Val Thr Gly Glu Trp Gly Arg Ala His Lys Ala Glu			
130	135	140	
ggc aag gtt cgg ctc ctg gct gat ccc act ggg gcc ttt ggg aag gag			599
Gly Lys Val Arg Leu Leu Ala Asp Pro Thr Gly Ala Phe Gly Lys Glu			
145	150	155	160
aca gac tta tta cta gat gat tcg ctg gtg tcc atc ttt ggg aat cga			647
Thr Asp Leu Leu Leu Asp Asp Ser Leu Val Ser Ile Phe Gly Asn Arg			
165	170	175	
cgt ctc aag agg ttc tcc atg gtg gta cag gat ggc ata gtg aag gcc			695
Arg Leu Lys Arg Phe Ser Met Val Val Gln Asp Gly Ile Val Lys Ala			
180	185	190	
ctg aat gtg gaa cca gat ggc aca ggc ctc acc tgc agc ctg gca ccc			743
Leu Asn Val Glu Pro Asp Gly Thr Gly Leu Thr Cys Ser Leu Ala Pro			
195	200	205	
aat atc atc tca cag ctc tga ggccctgggc cagattactt cctccacccc			794
Asn Ile Ile Ser Gln Leu			
210			
tccctatctc acctgcccag ccctgtgctg gggccctgca attggaatgt tggccagatt			854
tctgcaataa acacttgtgg tttgcggcca aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa			914
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaa			959

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 <212> PRT
 <213> Homo sapiens

<400> 40

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5

10

15

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Leu Val Gly Gly Ala Gly Gly Gln Ser Ala Ala Ala Ala Ala Arg Arg
20 25 30

Cys Ser Glu Gly Glu Trp Ala Ser Gly Gly Val Arg Ser Phe Ser Arg
35 40 45

Ala Ala Ala Ala Met Ala Pro Ile Lys Val Gly Asp Ala Ile Pro Ala
50 55 60

Val Glu Val Phe Glu Gly Glu Pro Gly Asn Lys Val Asn Leu Ala Glu
65 70 75 80

Leu Phe Lys Gly Lys Lys Gly Val Leu Phe Gly Val Pro Gly Ala Phe
85 90 95

Thr Pro Gly Cys Ser Lys Thr His Leu Pro Gly Phe Val Glu Gln Ala
100 105 110

Glu Ala Leu Lys Ala Lys Gly Val Gln Val Val Ala Cys Leu Ser Val
115 120 125

Asn Asp Ala Phe Val Thr Gly Glu Trp Gly Arg Ala His Lys Ala Glu
130 135 140

Gly Lys Val Arg Leu Leu Ala Asp Pro Thr Gly Ala Phe Gly Lys Glu
145 150 155 160

Thr Asp Leu Leu Leu Asp Asp Ser Leu Val Ser Ile Phe Gly Asn Arg
165 170 175

Arg Leu Lys Arg Phe Ser Met Val Val Gln Asp Gly Ile Val Lys Ala
180 185 190

Leu Asn Val Glu Pro Asp Gly Thr Gly Leu Thr Cys Ser Leu Ala Pro
195 200 205

Asn Ile Ile Ser Gln Leu
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<213> Homo sapiens

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<222> (7)..(678)

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 Ser Gly Ser Glu Ser Ser Asn Asp Gly Gly Ser Glu Ser Pro Gly Asp
 15 20 25 30
 gcg gga gcg gca gcg gaa ggg gga ggc tgg gcg gcg gcg gcg ttg gcg 144
 Ala Gly Ala Ala Ala Glu Gly Gly Gly Trp Ala Ala Ala Ala Leu Ala
 35 40 45
 ctt ctg acg ggg ggc ggg gaa atg ctg ctg aac gtg gcg ctg gtg gct 192
 Leu Leu Thr Gly Gly Gly Glu Met Leu Leu Asn Val Ala Leu Val Ala
 50 55 60
 ctg gtg ctg ctg ggg gcc tac cgg ctg tgg gtg cgc tgg ggg cgg cgg 240
 Leu Val Leu Leu Gly Ala Tyr Arg Leu Trp Val Arg Trp Gly Arg Arg
 65 70 75
 ggt ctg ggg gcc ggg gcc ggg gcg ggc gag gag agc ccc gcc acc tct 288
 Gly Leu Gly Ala Gly Ala Gly Ala Gly Glu Glu Ser Pro Ala Thr Ser
 80 85 90
 ctg cct cgc atg aag aag cgg gac ttc agc ttg gag cag ctg cgc cag 336
 Leu Pro Arg Met Lys Lys Arg Asp Phe Ser Leu Glu Gln Leu Arg Gln
 95 100 105 110
 tac gac ggc tcc cgc aac ccg cgc atc ctg ctc gcg gtc aat ggg aaa 384
 Tyr Asp Gly Ser Arg Asn Pro Arg Ile Leu Leu Ala Val Asn Gly Lys
 115 120 125
 gtc ttc gac gtg acc aaa ggc agc aag ttc tac ggc ccg gcg ggt cca 432
 Val Phe Asp Val Thr Lys Gly Ser Lys Phe Tyr Gly Pro Ala Gly Pro
 130 135 140
 tat gga ata ttt gct ggt agg gat gcc tcc aga gga ctg gcc aca ttt 480
 Tyr Gly Ile Phe Ala Gly Arg Asp Ala Ser Arg Gly Leu Ala Thr Phe
 145 150 155
 tgc cta gat aaa gat gca ctt aga gat gaa tat gat gat ctc tca gat 528
 Cys Leu Asp Lys Asp Ala Leu Arg Asp Glu Tyr Asp Asp Leu Ser Asp
 160 165 170
 ttg aat gca gta caa atg gag agt gtt cga gaa tgg gaa atg cag ttt 576
 Leu Asn Ala Val Gln Met Glu Ser Val Arg Glu Trp Glu Met Gln Phe
 175 180 185 190
 aaa gaa aaa tat gat tat gta ggc aga ctc cta aaa cca gga gaa gaa 624
 Lys Glu Lys Tyr Asp Tyr Val Gly Arg Leu Leu Lys Pro Gly Glu Glu
 195 200 205
 cca tca gaa tat aca gat gaa gaa gat acc aag gat cac aat aaa cag 672
 Pro Ser Glu Tyr Thr Asp Glu Glu Asp Thr Lys Asp His Asn Lys Gln
 210 215 220
 gat tga actttgtaaa caaccaaagt caggggcctt cagaactgca attcttactc 728
 Asp
 cctttcacag actgtccgga gtctttgggt ttgattcacc tgctgcgaaa aacattcaac 788

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aaaaaa 1874

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<210> 42
<211> 223
<212> PRT
<213> Homo sapiens

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<400> 42
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Ser Glu Ser Ser Asn Asp Gly Gly Ser Glu Ser Pro Gly Asp Ala Gly
          20          25          30
```

```
Ala Ala Ala Glu Gly Gly Gly Trp Ala Ala Ala Ala Leu Ala Leu Leu
          35          40          45
```

```
Thr Gly Gly Gly Glu Met Leu Leu Asn Val Ala Leu Val Ala Leu Val
          50          55          60
```

```
Leu Leu Gly Ala Tyr Arg Leu Trp Val Arg Trp Gly Arg Arg Gly Leu
Page 93

```

```

65              70              75              80
Gly Ala Gly Ala Gly Ala Gly Glu Glu Ser Pro Ala Thr Ser Leu Pro
85              90              95
Arg Met Lys Lys Arg Asp Phe Ser Leu Glu Gln Leu Arg Gln Tyr Asp
100            105            110
Gly Ser Arg Asn Pro Arg Ile Leu Leu Ala Val Asn Gly Lys Val Phe
115            120            125
Asp Val Thr Lys Gly Ser Lys Phe Tyr Gly Pro Ala Gly Pro Tyr Gly
130            135            140
Ile Phe Ala Gly Arg Asp Ala Ser Arg Gly Leu Ala Thr Phe Cys Leu
145            150            155            160
Asp Lys Asp Ala Leu Arg Asp Glu Tyr Asp Asp Leu Ser Asp Leu Asn
165            170            175
Ala Val Gln Met Glu Ser Val Arg Glu Trp Glu Met Gln Phe Lys Glu
180            185            190
Lys Tyr Asp Tyr Val Gly Arg Leu Leu Lys Pro Gly Glu Glu Pro Ser
195            200            205
Glu Tyr Thr Asp Glu Glu Asp Thr Lys Asp His Asn Lys Gln Asp
210            215            220

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<210> 43
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<212> DNA
<213> Homo sapiens

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<220>
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cggcccaagc ccgaccccgg gtccccctct cggccgcccc ccgcccggcc gcccgccctc      180
gggcctcccc ccgggccctc ggtccccctcc cccgctggcg gggcccggac agaag atg      238
                               Met
                               1
gtg cag aag aaa cca gcc gaa ctt cag ggt ttc cac cgt tcg ttc aag      286
Val Gln Lys Lys Pro Ala Glu Leu Gln Gly Phe His Arg Ser Phe Lys
5              10              15

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ggg Gly	cag Gln	aac Asn 20	ccc Pro	ttc Phe	gag Glu	ctg Leu	gcc Ala 25	ttc Phe	tcc Ser	cta Leu	gac Asp	cag Gln 30	ccc Pro	gac Asp	cac His	334
gga Gly	gac Asp 35	tct Ser	gac Asp	ttt Phe	ggc Gly	ctg Leu 40	cag Gln	tgc Cys	tca Ser	gcc Ala	cgc Arg 45	cct Pro	gac Asp	atg Met	ccc Pro	382
gcc Ala 50	agc Ser	cag Gln	ccc Pro	att Ile	gac Asp 55	atc Ile	ccg Pro	gac Asp	gcc Ala	aag Lys 60	aag Lys	agg Arg	ggc Gly	aag Lys	aag Lys 65	430
aag Lys	aag Lys	cgc Arg	ggc Gly	cgg Arg 70	gcc Ala	acc Thr	gac Asp	agc Ser	ttc Phe 75	tcg Ser	ggc Gly	agg Arg	ttt Phe	gaa Glu 80	gac Asp	478
gtc Val	tac Tyr	cag Gln	ctg Leu 85	cag Gln	gaa Glu	gat Asp	gtg Val	ctg Leu 90	ggg Gly	gag Glu	ggc Gly	gct Ala	cat His 95	gcc Ala	cga Arg	526
gtg Val	cag Gln	acc Thr 100	tgc Cys	atc Ile	aac Asn	ctg Leu	atc Ile 105	acc Thr	agc Ser	cag Gln	gag Glu	tac Tyr 110	gcc Ala	gtc Val	aag Lys	574
atc Ile 115	att Ile	gag Glu	aag Lys	cag Gln	cca Pro	ggc Gly 120	cac His	att Ile	cgg Arg	agc Ser	agg Arg 125	gtt Val	ttc Phe	agg Arg	gag Glu	622
gtg Val 130	gag Glu	atg Met	ctg Leu	tac Tyr	cag Gln 135	tgc Cys	cag Gln	gga Gly	cac His	agg Arg 140	aac Asn	gtc Val	cta Leu	gag Glu	ctg Leu 145	670
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atg Met	cgg Arg	gga Gly	ggc Gly 165	tcc Ser	atc Ile	ctg Leu	agc Ser	cac His 170	atc Ile	cac His	aag Lys	cgc Arg	cgg Arg 175	cac His	ttc Phe	766
aac Asn	gag Glu	ctg Leu 180	gag Glu	gcc Ala	agc Ser	gtg Val	gtg Val 185	gtg Val	cag Gln	gac Asp	gtg Val	gcc Ala 190	agc Ser	gcc Ala	ttg Leu	814
gac Asp 195	ttt Phe	ctg Leu	cat His	aac Asn	aaa Lys	ggc Gly 200	atc Ile	gcc Ala	cac His	agg Arg	gac Asp 205	cta Leu	aag Lys	ccg Pro	gaa Glu	862
aac Asn 210	atc Ile	ctc Leu	tgt Cys	gag Glu	cac His 215	ccc Pro	aac Asn	cag Gln	gtc Val	tcc Ser 220	ccc Pro	gtg Val	aag Lys	atc Ile	tgt Cys 225	910
gac Asp	ttc Phe	gac Asp	ctg Leu	ggc Gly 230	agc Ser	ggc Gly	atc Ile	aaa Lys	ctc Leu 235	aac Asn	ggg Gly	gac Asp	tgc Cys	tcc Ser 240	cct Pro	958
atc Ile	tcc Ser	acc Thr 245	ccg Pro	gag Glu	ctg Leu	ctc Leu	act Thr	ccg Pro 250	tgc Cys	ggc Gly	tcg Ser	gcg Ala	gag Glu 255	tac Tyr	atg Met	1006
gcc Ala	ccg Pro	gag Glu	gta Val	gtg Val	gag Glu	gcc Ala	ttc Phe	agc Ser	gag Glu	gag Glu	gct Ala	agc Ser	atc Ile	tac Tyr	gac Asp	1054

260	265	270	
aag cgc tgc gac ctg tgg agc ctg ggc gtc atc ttg tat atc cta ctc	Lys Arg Cys Asp Leu Trp Ser Leu Gly Val Ile Leu Tyr Ile Leu Leu	1102	
275	280	285	
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290	295	300	
gac cgc ggc gag gcc tgc cct gcc tgc cag aac atg ctg ttt gag agc	Asp Arg Gly Glu Ala Cys Pro Ala Cys Gln Asn Met Leu Phe Glu Ser	1198	
310	315	320	
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325	330	335	
tcc tgc gct gcc aaa gac ctc atc tcc aag ctg ctg gtc cgt gac gcc	Ser Cys Ala Ala Lys Asp Leu Ile Ser Lys Leu Leu Val Arg Asp Ala	1294	
340	345	350	
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355	360	365	
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370	375	380	
aac agc tgt gcc aaa gac ctc acg tcc ttc gcg gct gag gcc att gcc	Asn Ser Cys Ala Lys Asp Leu Thr Ser Phe Ala Ala Glu Ala Ile Ala	1438	
390	395	400	
atg aac cgg cag ctg gcc cag cac gac gag gac ctg gct gag gag gag	Met Asn Arg Gln Leu Ala Gln His Asp Glu Asp Leu Ala Glu Glu Glu	1486	
405	410	415	
gcc gcg ggg cag ggc cag ccc gtc ctg gtc cga gct acc tca cgc tgc	Ala Ala Gly Gln Gly Gln Pro Val Leu Val Arg Ala Thr Ser Arg Cys	1534	
420	425	430	
ctg cag ctg tct cca ccc tcc cag tcc aag ctg gcg cag cgg cgg caa	Leu Gln Leu Ser Pro Pro Ser Gln Ser Lys Leu Ala Gln Arg Arg Gln	1582	
435	440	445	
agg gcc agt ctg tcc tcg gcc cca gtg gtc ctg gtg gga gac cac gcc	Arg Ala Ser Leu Ser Ser Ala Pro Val Val Leu Val Gly Asp His Ala	1630	
450	455	460	
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Cys Asp Phe Asp Leu Gly Ser Gly Ile Lys Leu Asn Gly Asp Cys Ser
 Page 98

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840

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Pro Tyr Ala Ala Ala Met Asn Pro Cys Met Ser Pro Met Ala Tyr Ala
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Pro Ser Asn Leu Gly Arg Ser Arg Ala Gly Gly Gly Gly Asp Ala Lys
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Thr Phe Lys Arg Ser Tyr Pro His Ala Lys Pro Pro Tyr Ser Tyr Ile
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Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr Arg
 195 200 205

Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg His Ser Leu Ser Phe
 210 215 220

Asn Asp Cys Phe Val Lys Val Ala Arg Ser Pro Asp Lys Pro Gly Lys
 Page 118

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Glu Gly Ala Pro Ala Pro Gly Pro Ala Ala Ser Pro Gln Thr Leu Asp
325          330          335
His Ser Gly Ala Thr Ala Thr Gly Gly Ala Ser Glu Leu Lys Thr Pro
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Ala Ser Ser Thr Ala Pro Pro Ile Ser Ser Gly Pro Gly Ala Leu Ala
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385          390          395          400
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 Ser Trp Arg Leu Pro Ser Ala Pro Ser Asp Glu Ala Ser Phe Pro Gly
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 Leu Ile Thr Glu Ala His Thr Val Val Ala Asp Ala Leu Ala Lys Ala
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Leu	Arg	Gln	Leu	Arg	Ser	Pro	Ala	Leu	Leu	Arg	Glu	Ala	Val	Ala	Phe	
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Val Ser Glu Gln Ser Ile Leu Thr Ser Thr Ala Leu Leu Thr Ala Met
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Leu Leu Gly Thr Asp Arg Gln Pro Glu Ala Pro Gly Asp Asn Pro His
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Thr Leu Tyr Ala His Leu Ile Gly His Cys Asp His Leu Ser Asp Glu
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180 185 190

Leu Asp Leu Glu Glu Asp Pro Tyr Phe Thr Asp Ser Phe Leu Asp Ser
195 200 205

Gly Phe Gln Thr Pro Ala Lys Pro Arg Leu Ala Pro Ala Thr Ser Tyr
210 215 220

Asp Gly Lys Thr Ala Val Thr Glu Ile Val Asn Ser Phe Leu Cys Leu
225 230 235 240

Val Pro Glu Glu Ala Lys Thr Ser Ala Phe Leu Glu Glu Thr Gly Tyr
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Asp Thr Tyr Val His Asp Ala Tyr Gly Leu Phe Gln Glu Cys Ser Ser
260 265 270

Arg Val Ala Ser Trp Gly Trp Pro Leu Thr Pro Thr Pro Leu Asp Pro
275 280 285

His Glu Pro Glu Arg Pro Phe Phe Glu Gly His Phe Leu Arg Val Leu
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Phe Asp Arg Met Ser Arg Ile Leu Asp Gln Pro Tyr Ser Leu Asn Leu
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Gln Val Thr Ser Val Leu Ser Arg Leu Ala Leu Phe Pro His Pro His
325 330 335

Ile His Glu Tyr Leu Leu Asp Pro Tyr Ile Ser Leu Ala Pro Gly Cys
340 345 350

Arg Ser Leu Phe Ser Val Leu Val Arg Val Ile Gly Asp Leu Met Gln
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Arg Ile Gln Arg Val Pro Gln Phe Pro Gly Lys Leu Leu Leu Val Arg
370 375 380

Lys Gln Leu Thr Gly Gln Ala Pro Gly Glu Gln Leu Asp His Gln Thr
385 390 395 400

Leu Leu Gln Gly Val Val Val Leu Glu Glu Phe Cys Lys Glu Leu Ala
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 gaa ttg gaa aag agc atc ctg ctg gct tta gta gaa aag tat aaa tat 157
 Glu Leu Glu Lys Ser Ile Leu Leu Ala Leu Val Glu Lys Tyr Lys Tyr 15 20 25 30
 gtg ctg gaa tgt aag aaa agt gat gcg cga act att gcc ctt aag cag 205
 Val Leu Glu Cys Lys Lys Ser Asp Ala Arg Thr Ile Ala Leu Lys Gln 35 40 45
 cgt acc tgg cag gcg ctg gcc cac gaa tac aac tct cag ccc agc gtg 253
 Arg Thr Trp Gln Ala Leu Ala His Glu Tyr Asn Ser Gln Pro Ser Val 50 55 60
 tcc ctg cgg gat ttc aaa cag ctg aag aag tgc tgg gag aac atc aag 301
 Ser Leu Arg Asp Phe Lys Gln Leu Lys Lys Cys Trp Glu Asn Ile Lys 65 70 75
 gct cgg acc aaa aaa att atg gcc cat gaa agg aga gag aaa gtg aaa 349
 Ala Arg Thr Lys Lys Ile Met Ala His Glu Arg Arg Glu Lys Val Lys 80 85 90
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 Arg Ser Val Ser Pro Leu Leu Ser Thr His Val Leu Gly Lys Glu Lys 95 100 105 110
 atc gcc agc atg ctg ccg gag cag ctc tac ttc ctg cag agc ccc ccg 445
 Ile Ala Ser Met Leu Pro Glu Gln Leu Tyr Phe Leu Gln Ser Pro Pro 115 120 125
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 Glu Glu Glu Pro Glu Tyr His Pro Asp Ala Ser Ala Gln Glu Ser Phe 130 135 140
 gct gtt tca aat aga gaa ctg tgc gat gat gag aaa gag ttc ata cat 541
 Ala Val Ser Asn Arg Glu Leu Cys Asp Asp Glu Lys Glu Phe Ile His 145 150 155

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 Phe Pro Val Cys Glu Gly Thr Ser Gln Pro Glu Pro Ser Cys Ser Ala
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gtc aga ata aca gcc aat aaa aac tac agg agc aaa acc tct cag gaa 637
 Val Arg Ile Thr Ala Asn Lys Asn Tyr Arg Ser Lys Thr Ser Gln Glu
 175 180 185 190

ggt gct tta aaa aag atg cat gag gaa gaa cac cat caa caa atg tcc 685
 Gly Ala Leu Lys Lys Met His Glu Glu Glu His His Gln Gln Met Ser
 195 200 205

atc tta caa ctg caa ctg ata caa atg aat gag gtg cat gtg gcc aaa 733
 Ile Leu Gln Leu Gln Leu Ile Gln Met Asn Glu Val His Val Ala Lys
 210 215 220

atc cag cag ata gag cga gag tgt gag atg gca gag gag gaa cac agg 781
 Ile Gln Gln Ile Glu Arg Glu Cys Glu Met Ala Glu Glu Glu His Arg
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ata aaa atg gaa gtt ctc aat aaa aag aag atg tat tgg gaa aga aaa 829
 Ile Lys Met Glu Val Leu Asn Lys Lys Lys Met Tyr Trp Glu Arg Lys
 240 245 250

cta caa act ttt acc aag gaa tgg cct gtt tcc tca ttt aac cgg ccc 877
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 Phe Pro Asn Ser Pro
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Trp Gln Ala Leu Ala His Glu Tyr Asn Ser Gln Pro Ser Val Ser Leu
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      100      105      110

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      115      120      125

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      130      135      140

Ser Asn Arg Glu Leu Cys Asp Asp Glu Lys Glu Phe Ile His Phe Pro
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      180      185      190

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Gln Leu Gln Leu Ile Gln Met Asn Glu Val His Val Ala Lys Ile Gln
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Gln Ile Glu Arg Glu Cys Glu Met Ala Glu Glu Glu His Arg Ile Lys
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<213> Homo sapiens

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<220>

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<222> (12)..(1805)

<400> 55

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Ser Glu Pro Lys Leu Ser Lys Asn Glu Leu Lys Arg Arg Leu Lys Ala	
15 20 25	
gag aag aaa gta gca gag aag gag gcc aaa cag aag gag ctc agt gag	146
Glu Lys Lys Val Ala Glu Lys Glu Ala Lys Gln Lys Glu Leu Ser Glu	
30 35 40 45	
aaa cag cta agc caa gcc act gct gct gcc acc aac cac acc act gat	194
Lys Gln Leu Ser Gln Ala Thr Ala Ala Thr Asn His Thr Thr Asp	
50 55 60	
aat ggt gtg ggt cct gag gaa gag agc gtg gac cca aat caa tac tac	242
Asn Gly Val Gly Pro Glu Glu Glu Ser Val Asp Pro Asn Gln Tyr Tyr	
65 70 75	
aaa atc cgc agt caa gca att cat cag ctg aag gtc aat ggg gaa gac	290
Lys Ile Arg Ser Gln Ala Ile His Gln Leu Lys Val Asn Gly Glu Asp	
80 85 90	
cca tac cca cac aag ttc cat gta gac atc tca ctc act gac ttc atc	338
Pro Tyr Pro His Lys Phe His Val Asp Ile Ser Leu Thr Asp Phe Ile	
95 100 105	
caa aaa tat agt cac ctg cag cct ggg gat cac ctg act gac atc acc	386
Gln Lys Tyr Ser His Leu Gln Pro Gly Asp His Leu Thr Asp Ile Thr	
110 115 120 125	
tta aag gtg gca ggt agg atc cat gcc aaa aga gct tct ggg gga aag	434
Leu Lys Val Ala Gly Arg Ile His Ala Lys Arg Ala Ser Gly Gly Lys	
130 135 140	
ctc atc ttc tat gat ctt cga gga gag ggg gtg aag ttg caa gtc atg	482
Leu Ile Phe Tyr Asp Leu Arg Gly Glu Gly Val Lys Leu Gln Val Met	
145 150 155	
gcc aat tcc aga aat tat aaa tca gaa gaa gaa ttt att cat att aat	530
Ala Asn Ser Arg Asn Tyr Lys Ser Glu Glu Glu Phe Ile His Ile Asn	
160 165 170	
aac aaa ctg cgt cgg gga gac ata att gga gtt cag ggg aat cct ggt	578
Asn Lys Leu Arg Arg Gly Asp Ile Ile Gly Val Gln Gly Asn Pro Gly	
175 180 185	
aaa acc aag aag ggt gag ctg agc atc att ccg tat gag atc aca ctg	626
Lys Thr Lys Lys Gly Glu Leu Ser Ile Ile Pro Tyr Glu Ile Thr Leu	
190 195 200 205	
ctg tct ccc tgt ttg cat atg tta cct cat ctt cac ttt ggc ctc aaa	674
Leu Ser Pro Cys Leu His Met Leu Pro His Leu His Phe Gly Leu Lys	
210 215 220	

gac Asp	aag Lys	gaa Glu	aca Thr 225	agg Arg	tat Tyr	cgc Arg	cag Gln 230	aga Arg 230	tac Tyr	ttg Leu	gac Asp	ttg Leu 235	atc Ile 235	ctg Leu	aat Asn	722
gac Asp	ttt Phe	gtg Val 240	agg Arg	cag Gln	aaa Lys	ttt Phe	atc Ile 245	atc Ile	cgc Arg	tct Ser	aag Lys	atc Ile 250	atc Ile	aca Thr	tat Tyr	770
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atg Met 270	atg Met	aac Asn	atc Ile	atc Ile	cca Pro 275	ggg Gly	gga Gly	gcc Ala	gtg Val 280	gcc Ala 280	aag Lys	cct Pro	ttc Phe	atc Ile	act Thr 285	866
tat Tyr	cac His	aac Asn	gag Glu 290	ctg Leu 290	gac Asp	atg Met	aac Asn	tta Leu	tat Tyr 295	atg Met	aga Arg	att Ile	gct Ala	cca Pro 300	gaa Glu	914
ctc Leu	tat Tyr	cat His	aag Lys 305	atg Met	ctt Leu	gtg Val	gtt Val	ggt Gly 310	ggc Gly	atc Ile	gac Asp	cgg Arg	gtt Val 315	tat Tyr	gaa Glu	962
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gag Glu 335	ttc Phe 335	acc Thr	acc Thr	tgt Cys	gag Glu	ttc Phe 340	tac Tyr	atg Met	gcc Ala	tat Tyr	gca Ala 345	gac Asp	tat Tyr	cac His	gat Asp	1058
ctc Leu 350	atg Met	gaa Glu	atc Ile	acg Thr	gag Glu 355	aag Lys	atg Met	gtt Val	tca Ser	ggg Gly 360	atg Met	gtg Val	aag Lys	cat His	att Ile 365	1106
aca Thr	ggc Gly	agt Ser	tac Tyr	aag Lys 370	gtc Val	acc Thr	tac Tyr	cac His	cca Pro 375	gat Asp	ggc Gly	cca Pro	gag Glu	ggc Gly 380	caa Gln	1154
gcc Ala	tac Tyr	gat Asp	gtt Val 385	gac Asp	ttc Phe	acc Thr	cca Pro	ccc Pro 390	ttc Phe	cgg Arg	cga Arg	atc Ile	aac Asn 395	atg Met	gta Val	1202
gaa Glu	gag Glu	ctt Leu 400	gag Glu	aaa Lys	gcc Ala	ctg Leu 405	ggg Gly	atg Met	aag Lys	ctg Leu	cca Pro	gaa Glu 410	acg Thr	aac Asn	ctc Leu	1250
ttt Phe 415	gaa Glu	act Thr	gaa Glu	gaa Glu	act Thr	cgc Arg 420	aaa Lys	att Ile	ctt Leu	gat Asp	gat Asp 425	atc Ile	tgt Cys	gtg Val	gca Ala	1298
aaa Lys 430	gct Ala	gtt Val	gaa Glu	tgc Cys	cct Pro 435	cca Pro	cct Pro	cgg Arg	acc Thr	aca Thr 440	gcc Ala	agg Arg	ctc Leu	ctt Leu	gac Asp 445	1346
aag Lys	ctt Leu	gtt Val	ggg Gly 450	gag Glu	ttc Phe	ctg Leu	gaa Glu	gtg Val 455	act Thr 455	tgc Cys	atc Ile	aat Asn	cct Pro	aca Thr 460	ttc Phe	1394
atc Ile	tgt Cys	gat Asp	cac His 465	cca Pro	cag Gln	ata Ile	atg Met	agc Ser 470	cct Pro	ttg Leu	gct Ala	aaa Lys	tgg Trp 475	cac His	cgc Arg	1442

tct aaa gag ggt ctg act gag cgc ttt gag ctg ttt gtc atg aag aaa	1490
Ser Lys Glu Gly Leu Thr Glu Arg Phe Glu Leu Phe Val Met Lys Lys	
480 485 490	
gag ata tgc aat gcg tat act gag ctg aat gat ccc atg cgg cag cgg	1538
Glu Ile Cys Asn Ala Tyr Thr Glu Leu Asn Asp Pro Met Arg Gln Arg	
495 500 505	
cag ctt ttt gaa gaa cag gcc aag gcc aag gct gca ggt gat gat gag	1586
Gln Leu Phe Glu Glu Gln Ala Lys Ala Lys Ala Ala Gly Asp Asp Glu	
510 515 520 525	
gcc atg ttc ata gat gaa aac ttc tgt act gcc ctg gaa tat ggg ctg	1634
Ala Met Phe Ile Asp Glu Asn Phe Cys Thr Ala Leu Glu Tyr Gly Leu	
530 535 540	
ccc ccc aca gct ggc tgg ggc atg ggc att gat cga gtc gcc atg ttt	1682
Pro Pro Thr Ala Gly Trp Gly Met Gly Ile Asp Arg Val Ala Met Phe	
545 550 555	
ctc acg gac tcc aac aac atc aag gaa gta ctt ctg ttt cct gcc atg	1730
Leu Thr Asp Ser Asn Asn Ile Lys Glu Val Leu Leu Phe Pro Ala Met	
560 565 570	
aaa ccc gaa gac aag aag gag aat gta gca acc act gat aca ctg gaa	1778
Lys Pro Glu Asp Lys Lys Glu Asn Val Ala Thr Thr Asp Thr Leu Glu	
575 580 585	
agc aca aca gtt ggc act tct gtc tag aaaataataa ttgcaagttg	1825
Ser Thr Thr Val Gly Thr Ser Val	
590 595	
tataactcag gcgtcttttgc atttctgcga aagatcaagg tctgcaaggg aattcttgtg	1885
tgctgctttc catttgacac cgcagttctg ttcagccatc agaagagaga caaggaatta	1945
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<210> 56
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<400> 56

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Val Ala Glu Lys Glu Ala Lys Gln Lys Glu Leu Ser Glu Lys Gln Leu
35 40 45

Ser Gln Ala Thr Ala Ala Ala Thr Asn His Thr Thr Asp Asn Gly Val
50 55 60

Gly Pro Glu Glu Glu Ser Val Asp Pro Asn Gln Tyr Tyr Lys Ile Arg
65 70 75 80

Ser Gln Ala Ile His Gln Leu Lys Val Asn Gly Glu Asp Pro Tyr Pro
85 90 95

His Lys Phe His Val Asp Ile Ser Leu Thr Asp Phe Ile Gln Lys Tyr
100 105 110

Ser His Leu Gln Pro Gly Asp His Leu Thr Asp Ile Thr Leu Lys Val
115 120 125

Ala Gly Arg Ile His Ala Lys Arg Ala Ser Gly Gly Lys Leu Ile Phe
130 135 140

Tyr Asp Leu Arg Gly Glu Gly Val Lys Leu Gln Val Met Ala Asn Ser
145 150 155 160

Arg Asn Tyr Lys Ser Glu Glu Glu Phe Ile His Ile Asn Asn Lys Leu
165 170 175

Arg Arg Gly Asp Ile Ile Gly Val Gln Gly Asn Pro Gly Lys Thr Lys
180 185 190

Lys Gly Glu Leu Ser Ile Ile Pro Tyr Glu Ile Thr Leu Leu Ser Pro
195 200 205

Cys Leu His Met Leu Pro His Leu His Phe Gly Leu Lys Asp Lys Glu
210 215 220

Thr Arg Tyr Arg Gln Arg Tyr Leu Asp Leu Ile Leu Asn Asp Phe Val
225 230 235 240

Arg Gln Lys Phe Ile Ile Arg Ser Lys Ile Ile Thr Tyr Ile Arg Ser
245 250 255

Phe Leu Asp Glu Leu Gly Phe Leu Glu Ile Glu Thr Pro Met Met Asn
260 265 270

Ile Ile Pro Gly Gly Ala Val Ala Lys Pro Phe Ile Thr Tyr His Asn
275 280 285

Glu Leu Asp Met Asn Leu Tyr Met Arg Ile Ala Pro Glu Leu Tyr His
290 295 300

Lys Met Leu Val Val Gly Gly Ile Asp Arg Val Tyr Glu Ile Gly Arg
305 310 315 320

Gln Phe Arg Asn Glu Gly Ile Asp Leu Thr His Asn Pro Glu Phe Thr
 325 330 335

Thr Cys Glu Phe Tyr Met Ala Tyr Ala Asp Tyr His Asp Leu Met Glu
 340 345 350

Ile Thr Glu Lys Met Val Ser Gly Met Val Lys His Ile Thr Gly Ser
 355 360 365

Tyr Lys Val Thr Tyr His Pro Asp Gly Pro Glu Gly Gln Ala Tyr Asp
 370 375 380

Val Asp Phe Thr Pro Pro Phe Arg Arg Ile Asn Met Val Glu Glu Leu
 385 390 395 400

Glu Lys Ala Leu Gly Met Lys Leu Pro Glu Thr Asn Leu Phe Glu Thr
 405 410 415

Glu Glu Thr Arg Lys Ile Leu Asp Asp Ile Cys Val Ala Lys Ala Val
 420 425 430

Glu Cys Pro Pro Pro Arg Thr Thr Ala Arg Leu Leu Asp Lys Leu Val
 435 440 445

Gly Glu Phe Leu Glu Val Thr Cys Ile Asn Pro Thr Phe Ile Cys Asp
 450 455 460

His Pro Gln Ile Met Ser Pro Leu Ala Lys Trp His Arg Ser Lys Glu
 465 470 475 480

Gly Leu Thr Glu Arg Phe Glu Leu Phe Val Met Lys Lys Glu Ile Cys
 485 490 495

Asn Ala Tyr Thr Glu Leu Asn Asp Pro Met Arg Gln Arg Gln Leu Phe
 500 505 510

Glu Glu Gln Ala Lys Ala Lys Ala Ala Gly Asp Asp Glu Ala Met Phe
 515 520 525

Ile Asp Glu Asn Phe Cys Thr Ala Leu Glu Tyr Gly Leu Pro Pro Thr
 530 535 540

Ala Gly Trp Gly Met Gly Ile Asp Arg Val Ala Met Phe Leu Thr Asp
 545 550 555 560

Ser Asn Asn Ile Lys Glu Val Leu Leu Phe Pro Ala Met Lys Pro Glu
 565 570 575

ctc ctc gcc atc atc ttg cta ctg ctc aaa atc tgg aag tcc cgc tcg Leu Leu Ala Ile Ile Leu Leu Leu Lys Ile Trp Lys Ser Arg Ser 15 20 25	279
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act gcc cga tat ctg gac ctc ttc acc aac tac atc tca ctc tac aac Thr Ala Arg Tyr Leu Asp Leu Phe Thr Asn Tyr Ile Ser Leu Tyr Asn 45 50 55 60	375
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ttg att tat agc aag ttc aaa gct act tac gat ggg aac cat gac acg Leu Ile Tyr Ser Lys Phe Lys Ala Thr Tyr Asp Gly Asn His Asp Thr 80 85 90	471
ttc aga gtg gag ttc ctg gtc gtt ccc aca gcc att ctg gcg ttc ctg Phe Arg Val Glu Phe Leu Val Val Pro Thr Ala Ile Leu Ala Phe Leu 95 100 105	519
gtc aat cat gac ttc acc cct ctg gag atc ctc tgg acc ttc tcc atc Val Asn His Asp Phe Thr Pro Leu Glu Ile Leu Trp Thr Phe Ser Ile 110 115 120	567
tac ctg gag tca gtg gcc atc ttg ccg cag ctg ttc atg gtg agc aag Tyr Leu Glu Ser Val Ala Ile Leu Pro Gln Leu Phe Met Val Ser Lys 125 130 135 140	615
acc ggc gag gcg gag acc atc acc agc cac tac ttg ttt gcg cta ggc Thr Gly Glu Ala Glu Thr Ile Thr Ser His Tyr Leu Phe Ala Leu Gly 145 150 155	663
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gtttttcttc tactctgtgg ccccaatttt tataaagtgt ttttgagtgt cctatgggcc	1154

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a 1575

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<210> 59
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<212> PRT
<213> Homo sapiens

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<400> 59
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Ile Leu Leu Leu Leu Lys Ile Trp Lys Ser Arg Ser Cys Ala Gly Ile
20 25 30
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Ser Gly Lys Ser Gln Val Leu Phe Ala Val Val Phe Thr Ala Arg Tyr
35 40 45
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Leu Asp Leu Phe Thr Asn Tyr Ile Ser Leu Tyr Asn Thr Cys Met Lys
50 55 60
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Val Val Tyr Ile Ala Cys Ser Phe Thr Thr Val Trp Leu Ile Tyr Ser
65 70 75 80
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Lys Phe Lys Ala Thr Tyr Asp Gly Asn His Asp Thr Phe Arg Val Glu
85 90 95
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Phe Leu Val Val Pro Thr Ala Ile Leu Ala Phe Leu Val Asn His Asp
100 105 110
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Phe Thr Pro Leu Glu Ile Leu Trp Thr Phe Ser Ile Tyr Leu Glu Ser
115 120 125
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Val Ala Ile Leu Pro Gln Leu Phe Met Val Ser Lys Thr Gly Glu Ala
130 135 140
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Glu Thr Ile Thr Ser His Tyr Leu Phe Ala Leu Gly Val Tyr Arg Thr
145 150 155 160
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Leu Tyr Leu Phe Asn Trp Ile Trp Arg Tyr His Phe Glu Gly Phe Phe
165 170 175

Asp Leu Ile Ala Ile Val Ala Gly Leu Val Gln Thr Val Leu Tyr Cys
180 185 190

Asp Phe Phe Tyr Leu Tyr Ile Thr Lys Val Leu Lys Gly Lys Lys Leu
195 200 205

Ser Leu Pro Ala
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<210> 60
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<212> DNA
<213> Homo sapiens

<220>
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<222> (157)..(1110)

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ggtgcttggg gctccagcag ctggctggag cccgcg atg acg tca cgg act cgg 174
Met Thr Ser Arg Thr Arg
1 5
gtc aca tgg ccg agt ccg ccc cgc ccc ctc ccc gtc ccc gcc gct gca 222
Val Thr Trp Pro Ser Pro Pro Arg Pro Leu Pro Val Pro Ala Ala Ala
10 15 20
gcc gtc gcc ttc gga gcg aag ggt acc gac ccg gca gaa gct cgg agc 270
Ala Val Ala Phe Gly Ala Lys Gly Thr Asp Pro Ala Glu Ala Arg Ser
25 30 35
tct cgg ggt atc gag gag gca ggc ccg cgg gcg cac ggg cga gcg ggc 318
Ser Arg Gly Ile Glu Glu Ala Gly Pro Arg Ala His Gly Arg Ala Gly
40 45 50
cgg gag ccg gag ccg ccg agg agc ccg cag cag ccg cgc ggc ggg ctc 366
Arg Glu Pro Glu Arg Arg Arg Ser Arg Gln Gln Arg Arg Gly Gly Leu
55 60 65 70
cag gcg agg ccg tcg acg ctc ctg aaa act tgc gcg cgc gct cgc gcc 414
Gln Ala Arg Arg Ser Thr Leu Leu Lys Thr Cys Ala Arg Ala Arg Ala
75 80 85
act gcg ccc gga gcg atg aag atg gtc gcg ccc tgg acg ccg ttc tac 462
Thr Ala Pro Gly Ala Met Lys Met Val Ala Pro Trp Thr Arg Phe Tyr
90 95 100
tcc aac agc tgc tgc ttg tgc tgc cat gtc cgc acc ggc acc atc ctg 510
Ser Asn Ser Cys Cys Leu Cys Cys His Val Arg Thr Gly Thr Ile Leu
105 110 115

ctc ggc gtc tgg tat ctg atc atc aat gct gtg gta ctg ttg att tta Leu Gly Val Trp Tyr Leu Ile Ile Asn Ala Val Val Leu Leu Ile Leu 120 125 130	558
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ctg gga ggt gac ttt gag ttc atg gat gat gcc aac atg tgc att gcc Leu Gly Gly Asp Phe Glu Phe Met Asp Asp Ala Asn Met Cys Ile Ala 155 160 165	654
att gcg att tct ctt ctc atg atc ctg ata tgt gct atg gct act tac Ile Ala Ile Ser Leu Leu Met Ile Leu Ile Cys Ala Met Ala Thr Tyr 170 175 180	702
gga gcg tac aag caa cgc gca gcc tgg atc atc cca ttc ttc tgt tac Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile Ile Pro Phe Phe Cys Tyr 185 190 195	750
cag atc ttt gac ttt gcc ctg aac atg ttg gtt gca atc act gtg ctt Gln Ile Phe Asp Phe Ala Leu Asn Met Leu Val Ala Ile Thr Val Leu 200 205 210	798
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ttt ccc tac aga gat gat gtc atg tca gtg aat cct acc tgt ttg gtc Phe Pro Tyr Arg Asp Asp Val Met Ser Val Asn Pro Thr Cys Leu Val 235 240 245	894
ctt att att ctt ctg ttt att agc att atc ttg act ttt aag ggt tac Leu Ile Ile Leu Leu Phe Ile Ser Ile Ile Leu Thr Phe Lys Gly Tyr 250 255 260	942
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cta ccc ccg tat gat gat gcc act gtg aat ggt gct gcc aag gag cca Leu Pro Pro Tyr Asp Asp Ala Thr Val Asn Gly Ala Ala Lys Glu Pro 295 300 305 310	1086
ccg cca cct tac gtg tct gcc taa gccttcaagt gggcggagct gagggcagca Pro Pro Pro Tyr Val Ser Ala 315	1140
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tagttttcaa catatgcttt gctggaacac tgtgatagat taactgtaga attcttcctg 1320	
tacgattggg gatataatgg gcttcactaa ccttccttag gcattgaaac ttcccccaaa 1380	
tctgatggac ctagaagtct gcttttgtac ctgctgggcc ccaaagttag gcatttttct 1440	

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gttctaatta ggtaaataga agtccttatg tatgtgttac aagaatttcc cccacaacat 1620
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atggatgtgt ttggcgctgc atgggatctg gtgccccctt tctcctggat tcacatcccc 1860
acccagggcc cgcttttact aagtgttctg ccctagattg gttcaaggag gtcaccaaac 1920
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 <212> PRT
 <213> Homo sapiens

<400> 61

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Pro Ala Glu Ala Arg Ser Ser Arg Gly Ile Glu Glu Ala Gly Pro Arg
35 40 45

Ala His Gly Arg Ala Gly Arg Glu Pro Glu Arg Arg Arg Ser Arg Gln
50 55 60

Gln Arg Arg Gly Gly Leu Gln Ala Arg Arg Ser Thr Leu Leu Lys Thr
65 70 75 80

Cys Ala Arg Ala Arg Ala Thr Ala Pro Gly Ala Met Lys Met Val Ala
85 90 95

Pro Trp Thr Arg Phe Tyr Ser Asn Ser Cys Cys Leu Cys Cys His Val
100 105 110

2007-06-23 1254-0326PUS1.ST251

Arg Thr Gly Thr Ile Leu Leu Gly Val Trp Tyr Leu Ile Ile Asn Ala
115 120 125

Val Val Leu Leu Ile Leu Leu Ser Ala Leu Ala Asp Pro Asp Gln Tyr
130 135 140

Asn Phe Ser Ser Ser Glu Leu Gly Gly Asp Phe Glu Phe Met Asp Asp
145 150 155 160

Ala Asn Met Cys Ile Ala Ile Ala Ile Ser Leu Leu Met Ile Leu Ile
165 170 175

Cys Ala Met Ala Thr Tyr Gly Ala Tyr Lys Gln Arg Ala Ala Trp Ile
180 185 190

Ile Pro Phe Phe Cys Tyr Gln Ile Phe Asp Phe Ala Leu Asn Met Leu
195 200 205

Val Ala Ile Thr Val Leu Ile Tyr Pro Asn Ser Ile Gln Glu Tyr Ile
210 215 220

Arg Gln Leu Pro Pro Asn Phe Pro Tyr Arg Asp Asp Val Met Ser Val
225 230 235 240

Asn Pro Thr Cys Leu Val Leu Ile Ile Leu Leu Phe Ile Ser Ile Ile
245 250 255

Leu Thr Phe Lys Gly Tyr Leu Ile Ser Cys Val Trp Asn Cys Tyr Arg
260 265 270

Tyr Ile Asn Gly Arg Asn Ser Ser Asp Val Leu Val Tyr Val Thr Ser
275 280 285

Asn Asp Thr Thr Val Leu Leu Pro Pro Tyr Asp Asp Ala Thr Val Asn
290 295 300

Gly Ala Ala Lys Glu Pro Pro Pro Pro Tyr Val Ser Ala
305 310 315

<210> 62
<211> 1453
<212> DNA
<213> Homo sapiens

<220>
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<222> (65)..(1057)

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Met Ser Asp Ser Glu Lys Leu Asn Leu Asp Ser Ile Ile Gly Arg
1 5 10 15

ctg ctg gaa gtg cag ggc tcg cgg cct ggc aag aat gta cag ctg aca 157
Leu Leu Glu Val Gln Gly Ser Arg Pro Gly Lys Asn Val Gln Leu Thr
20 25 30

gag aac gag atc cgc ggt ctg tgc ctg aaa tcc cgg gag att ttt ctg 205
Glu Asn Glu Ile Arg Gly Leu Cys Leu Lys Ser Arg Glu Ile Phe Leu
35 40 45

agc cag ccc att ctt ctg gag ctg gag gca ccc ctc aag atc tgc ggt 253
Ser Gln Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu Lys Ile Cys Gly
50 55 60

gac ata cac ggc cag tac tac gac ctt ctg cga cta ttt gag tat ggc 301
Asp Ile His Gly Gln Tyr Tyr Asp Leu Leu Arg Leu Phe Glu Tyr Gly
65 70 75

ggt ttc cct ccc gag agc aac tac ctc ttt ctg ggg gac tat gtg gac 349
Gly Phe Pro Pro Glu Ser Asn Tyr Leu Phe Leu Gly Asp Tyr Val Asp
80 85 90 95

agg ggc aag cag tcc ttg gag acc atc tgc ctg ctg ctg gcc tat aag 397
Arg Gly Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys
100 105 110

atc aag tac ccc gag aac ttc ttc ctg ctc cgt ggg aac cac gag tgt 445
Ile Lys Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys
115 120 125

gcc agc atc aac cgc atc tat ggt ttc tac gat gag tgc aag aga cgc 493
Ala Ser Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu Cys Lys Arg Arg
130 135 140

tac aac atc aaa ctg tgg aaa acc ttc act gac tgc ttc aac tgc ctg 541
Tyr Asn Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys Phe Asn Cys Leu
145 150 155

ccc atc gcg gcc ata gtg gac gaa aag atc ttc tgc tgc cac gga ggc 589
Pro Ile Ala Ala Ile Val Asp Glu Lys Ile Phe Cys Cys His Gly Gly
160 165 170 175

ctg tcc ccg gac ctg cag tct atg gag cag att cgg cgg atc atg cgg 637
Leu Ser Pro Asp Leu Gln Ser Met Glu Gln Ile Arg Arg Ile Met Arg
180 185 190

ccc aca gat gtg cct gac cag ggc ctg ctg tgt gac ctg ctg tgg tct 685
Pro Thr Asp Val Pro Asp Gln Gly Leu Leu Cys Asp Leu Leu Trp Ser
195 200 205

gac cct gac aag gac gtg cag ggc tgg ggc gag aac gac cgt ggc gtc 733
Asp Pro Asp Lys Asp Val Gln Gly Trp Gly Glu Asn Asp Arg Gly Val
210 215 220

tct ttt acc ttt gga gcc gag gtg gtg gcc aag ttc ctc cac aag cac 781
Ser Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe Leu His Lys His
225 230 235

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gac ttg gac ctc atc tgc cga gca cac cag gtg gta gaa gac ggc tac 829
 Asp Leu Asp Leu Ile Cys Arg Ala His Gln Val Val Glu Asp Gly Tyr
 240 245 250 255

gag ttc ttt gcc aag cgg cag ctg gtg aca ctt ttc tca gct ccc aac 877
 Glu Phe Phe Ala Lys Arg Gln Leu Val Thr Leu Phe Ser Ala Pro Asn
 260 265 270

tac tgt ggc gag ttt gac aat gct ggc gcc atg atg agt gtg gac gag 925
 Tyr Cys Gly Glu Phe Asp Asn Ala Gly Ala Met Met Ser Val Asp Glu
 275 280 285

acc ctc atg tgc tct ttc cag atc ctc aag ccc gcc gac aag aac aag 973
 Thr Leu Met Cys Ser Phe Gln Ile Leu Lys Pro Ala Asp Lys Asn Lys
 290 295 300

ggg aag tac ggg cag ttc agt ggc ctg aac cct gga ggc cga ccc atc 1021
 Gly Lys Tyr Gly Gln Phe Ser Gly Leu Asn Pro Gly Gly Arg Pro Ile
 305 310 315

acc cca ccc cgc aat tcc gcc aaa gcc aag aaa tag cccccgcaca 1067
 Thr Pro Pro Arg Asn Ser Ala Lys Ala Lys Lys
 320 325 330

ccaccctgtg cccagatga tggattgatt gtacagaaat catgctgccca tgctgggggg 1127

gggtcacccc gaccctcag gccacctgt cacggggaac atggagcctt ggtgtatttt 1187

tcttttcttt ttttaatgaa tcaatagcag cgtccagtc cccagggctg cttcctgcct 1247

gcacctgcgg tgactgtgag caggatcctg gggccgaggc tgcagctcag ggcaacggca 1307

ggccaggctg tgggtctcca gccgtgcttg gcctcagggc tggcagccgg atcctggggc 1367

aaccatctg gtctcttgaa taaagggtcaa agctggattc tcaaaaaaaaa aaaaaaaaaa 1427

aaaaaaaaaa aaaaaaaaaa aaaaaa 1453

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<211> 330

<212> PRT

<213> Homo sapiens

<400> 63

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 1 5 10 15

Leu Glu Val Gln Gly Ser Arg Pro Gly Lys Asn Val Gln Leu Thr Glu
 20 25 30

Asn Glu Ile Arg Gly Leu Cys Leu Lys Ser Arg Glu Ile Phe Leu Ser
 35 40 45

Gln Pro Ile Leu Leu Glu Leu Glu Ala Pro Leu Lys Ile Cys Gly Asp
 50 55 60

Ile His Gly Gln Tyr Tyr Asp Leu Leu Arg Leu Phe Glu Tyr Gly Gly
 Page 141

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65          70          75          80
Phe Pro Pro Glu Ser Asn Tyr Leu Phe Leu Gly Asp Tyr Val Asp Arg
85          90          95
Gly Lys Gln Ser Leu Glu Thr Ile Cys Leu Leu Leu Ala Tyr Lys Ile
100         105         110
Lys Tyr Pro Glu Asn Phe Phe Leu Leu Arg Gly Asn His Glu Cys Ala
115         120         125
Ser Ile Asn Arg Ile Tyr Gly Phe Tyr Asp Glu Cys Lys Arg Arg Tyr
130         135         140
Asn Ile Lys Leu Trp Lys Thr Phe Thr Asp Cys Phe Asn Cys Leu Pro
145         150         155         160
Ile Ala Ala Ile Val Asp Glu Lys Ile Phe Cys Cys His Gly Gly Leu
165         170         175
Ser Pro Asp Leu Gln Ser Met Glu Gln Ile Arg Arg Ile Met Arg Pro
180         185         190
Thr Asp Val Pro Asp Gln Gly Leu Leu Cys Asp Leu Leu Trp Ser Asp
195         200         205
Pro Asp Lys Asp Val Gln Gly Trp Gly Glu Asn Asp Arg Gly Val Ser
210         215         220
Phe Thr Phe Gly Ala Glu Val Val Ala Lys Phe Leu His Lys His Asp
225         230         235         240
Leu Asp Leu Ile Cys Arg Ala His Gln Val Val Glu Asp Gly Tyr Glu
245         250         255
Phe Phe Ala Lys Arg Gln Leu Val Thr Leu Phe Ser Ala Pro Asn Tyr
260         265         270
Cys Gly Glu Phe Asp Asn Ala Gly Ala Met Met Ser Val Asp Glu Thr
275         280         285
Leu Met Cys Ser Phe Gln Ile Leu Lys Pro Ala Asp Lys Asn Lys Gly
290         295         300
Lys Tyr Gly Gln Phe Ser Gly Leu Asn Pro Gly Gly Arg Pro Ile Thr
305         310         315         320

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Pro Pro Arg Asn Ser Ala Lys Ala Lys Lys
325 330

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<212> DNA
<213> Homo sapiens

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Val Gly Arg Leu Leu Arg Ala Ser Val Ala Arg His Val Ser Ala Ile
5 10 15 20

cct tgg ggc att tct gcc act gca gcc ctc agg cct gct gca tgt gga 151
Pro Trp Gly Ile Ser Ala Thr Ala Ala Leu Arg Pro Ala Ala Cys Gly
25 30 35

aga acg agc ttg aca aat tta ttg tgt tct ggt tcc agt caa gca aaa 199
Arg Thr Ser Leu Thr Asn Leu Leu Cys Ser Gly Ser Ser Gln Ala Lys
40 45 50

tta ttc agc acc agt tcc tca tgc cat gca cct gct gtc acc cag cat 247
Leu Phe Ser Thr Ser Ser Ser Cys His Ala Pro Ala Val Thr Gln His
55 60 65

gca ccc tat ttt aag ggt aca gcc gtt gtc aat gga gag ttc aaa gac 295
Ala Pro Tyr Phe Lys Gly Thr Ala Val Val Asn Gly Glu Phe Lys Asp
70 75 80

cta agc ctt gat gac ttt aag ggg aaa tat ttg gtg ctt ttc ttc tat 343
Leu Ser Leu Asp Asp Phe Lys Gly Lys Tyr Leu Val Leu Phe Phe Tyr
85 90 95 100

cct ttg gat ttc acc ttt gtg tgt cct aca gaa att gtt gct ttt agt 391
Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile Val Ala Phe Ser
105 110 115

gac aaa gct aac gaa ttt cac gac gtg aac tgt gaa gtt gtc gca gtc 439
Asp Lys Ala Asn Glu Phe His Asp Val Asn Cys Glu Val Val Ala Val
120 125 130

tca gtg gat tcc cac ttt agc cat ctt gcc tgg ata aat aca cca agg 487
Ser Val Asp Ser His Phe Ser His Leu Ala Trp Ile Asn Thr Pro Arg
135 140 145

aag aat ggt ggt ttg ggc cac atg aac atc gca ctc ttg tca gac tta 535
Lys Asn Gly Gly Leu Gly His Met Asn Ile Ala Leu Leu Ser Asp Leu
150 155 160

act aag cag att tcc cga gac tac ggt gtg ctg tta gaa ggt tct ggt 583
Thr Lys Gln Ile Ser Arg Asp Tyr Gly Val Leu Leu Glu Gly Ser Gly
165 170 175 180

ctt gca cta aga ggt ctc ttc ata att gac ccc aat gga gtc atc aag 631
 Leu Ala Leu Arg Gly Leu Phe Ile Ile Asp Pro Asn Gly Val Ile Lys
 185 190 195

cat ttg agc gtc aac gat ctc cca gtg ggc cga agc gtg gaa gaa acc 679
 His Leu Ser Val Asn Asp Leu Pro Val Gly Arg Ser Val Glu Glu Thr
 200 205 210

ctc cgc ttg gtg aag gcg ttc cag tat gta gaa aca cat gga gaa gtc 727
 Leu Arg Leu Val Lys Ala Phe Gln Tyr Val Glu Thr His Gly Glu Val
 215 220 225

tgc cca gcg aac tgg aca ccg gat tct cct acg atc aag cca agt cca 775
 Cys Pro Ala Asn Trp Thr Pro Asp Ser Pro Thr Ile Lys Pro Ser Pro
 230 235 240

gct gct tcc aaa gag tac ttt cag aag gta aat cag tag atcacccatg 824
 Ala Ala Ser Lys Glu Tyr Phe Gln Lys Val Asn Gln
 245 250 255

tgtatctgca ccttctcaac tgagagaaga accacagttg aaacctgctt ttatcatttt 884

caagatgggtt atttgtagaa ggcaaggaac caattatgct tgtattcata agtattactc 944

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aaggaatcct ttattggtaa catcttggtg gctggctagc tagtttctac agaacataat 1064

ttgcctctat agaaggctat tcttagatca tgtctcaatg gaaacactct tctttcttag 1124

ccttacttga atcttgcccta taataaagta gagcaacaca cattgaaagc ttctgatcaa 1184

cggtcctgaa attttcatct tgaatgtctt tgtattaaac tgaattttct tttaagctaa 1244

caaagatcat aattttcaat gattagccgt gtaactcctg caatgaatgt ttatgtgatt 1304

gaagcaaattg tgaatcgat tattttaaaa agtggcagag tgacttaact gatcatgcat 1364

gatccctcat ccctgaaatt gagtttatgt agtcatttta cttattttat tcattagcta 1424

actttgtcta tgtatatttc tagatattga ttagtgtaat cgattataaa ggatatttat 1484

caaatccagg gattgcattt tgaaattata attattttct ttgctgaagt attcattgta 1544

aaacatacaa aataaacata ttttaaaaca tttgcatttt accacca 1591

<210> 65

<211> 256

<212> PRT

<213> Homo sapiens

<400> 65

Met Ala Ala Ala Val Gly Arg Leu Leu Arg Ala Ser Val Ala Arg His
 1 5 10 15

Val Ser Ala Ile Pro Trp Gly Ile Ser Ala Thr Ala Ala Leu Arg Pro
 20 25 30

Ala Ala Cys Gly Arg Thr Ser Leu Thr Asn Leu Leu Cys Ser Gly Ser
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35

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Ser Gln Ala Lys Leu Phe Ser Thr Ser Ser Ser Cys His Ala Pro Ala
50      55      60

Val Thr Gln His Ala Pro Tyr Phe Lys Gly Thr Ala Val Val Asn Gly
65      70      75      80

Glu Phe Lys Asp Leu Ser Leu Asp Asp Phe Lys Gly Lys Tyr Leu Val
85      90      95

Leu Phe Phe Tyr Pro Leu Asp Phe Thr Phe Val Cys Pro Thr Glu Ile
100     105     110

Val Ala Phe Ser Asp Lys Ala Asn Glu Phe His Asp Val Asn Cys Glu
115     120     125

Val Val Ala Val Ser Val Asp Ser His Phe Ser His Leu Ala Trp Ile
130     135     140

Asn Thr Pro Arg Lys Asn Gly Gly Leu Gly His Met Asn Ile Ala Leu
145     150     155     160

Leu Ser Asp Leu Thr Lys Gln Ile Ser Arg Asp Tyr Gly Val Leu Leu
165     170     175

Glu Gly Ser Gly Leu Ala Leu Arg Gly Leu Phe Ile Ile Asp Pro Asn
180     185     190

Gly Val Ile Lys His Leu Ser Val Asn Asp Leu Pro Val Gly Arg Ser
195     200     205

Val Glu Glu Thr Leu Arg Leu Val Lys Ala Phe Gln Tyr Val Glu Thr
210     215     220

His Gly Glu Val Cys Pro Ala Asn Trp Thr Pro Asp Ser Pro Thr Ile
225     230     235     240

Lys Pro Ser Pro Ala Ala Ser Lys Glu Tyr Phe Gln Lys Val Asn Gln
245     250     255

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<212> DNA
<213> Homo sapiens

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 Met Asp Ser Lys His Gln Cys Val Lys Leu Asn Asp Gly His
 1 5 10
 ttc atg cct gta ttg gga ttt ggc acc tat gca cct cca gag gtt ccg 159
 Phe Met Pro Val Leu Gly Phe Gly Thr Tyr Ala Pro Pro Glu Val Pro
 15 20 25 30
 aga agt aaa gct ttg gag gtc aca aaa tta gca ata gaa gct ggg ttc 207
 Arg Ser Lys Ala Leu Glu Val Thr Lys Leu Ala Ile Glu Ala Gly Phe
 35 40 45
 cgc cat ata gat tct gct cat tta tac aat aat gag gag cag gtt gga 255
 Arg His Ile Asp Ser Ala His Leu Tyr Asn Asn Glu Glu Gln Val Gly
 50 55 60
 ctg gcc atc cga agc aag att gca gat ggc agt gtg aag aga gaa gac 303
 Leu Ala Ile Arg Ser Lys Ile Ala Asp Gly Ser Val Lys Arg Glu Asp
 65 70 75
 ata ttc tac act tca aag ctt tgg tcc act ttt cat cga cca gag ttg 351
 Ile Phe Tyr Thr Ser Lys Leu Trp Ser Thr Phe His Arg Pro Glu Leu
 80 85 90
 gtc cga cca gcc ttg gaa aac tca ctg aag aaa gct caa ttg gac tat 399
 Val Arg Pro Ala Leu Glu Asn Ser Leu Lys Lys Ala Gln Leu Asp Tyr
 95 100 105 110
 gtt gac ctc tat ctt att cat tct cca atg tct cta aag cca ggt gag 447
 Val Asp Leu Tyr Leu Ile His Ser Pro Met Ser Leu Lys Pro Gly Glu
 115 120 125
 gaa ctt tca cca aca gat gaa aat gga aaa gta ata ttt gac ata gtg 495
 Glu Leu Ser Pro Thr Asp Glu Asn Gly Lys Val Ile Phe Asp Ile Val
 130 135 140
 gat ctc tgt acc acc tgg gag gcc atg gag aag tgt aag gat gca gga 543
 Asp Leu Cys Thr Thr Trp Glu Ala Met Glu Lys Cys Lys Asp Ala Gly
 145 150 155
 ttg gcc aag tcc att ggg gtg tca aac ttc aac cgc agg cag ctg gag 591
 Leu Ala Lys Ser Ile Gly Val Ser Asn Phe Asn Arg Arg Gln Leu Glu
 160 165 170
 atg atc ctc aac aag cca gga ctc aag tac aag cct gtc tgc aac cag 639
 Met Ile Leu Asn Lys Pro Gly Leu Lys Tyr Lys Pro Val Cys Asn Gln
 175 180 185 190
 gta gaa tgt cat ccg tat ttc aac cgg agt aaa ttg cta gat ttc tgc 687
 Val Glu Cys His Pro Tyr Phe Asn Arg Ser Lys Leu Leu Asp Phe Cys
 195 200 205
 aag tcg aaa gat att gtt ctg gtt gcc tat agt gct ctg gga tct caa 735
 Lys Ser Lys Asp Ile Val Leu Val Ala Tyr Ser Ala Leu Gly Ser Gln
 210 215 220
 cga gac aaa cga tgg gtg gac ccg aac tcc ccg gtg ctc ttg gag gac 783
 Arg Asp Lys Arg Trp Val Asp Pro Asn Ser Pro Val Leu Leu Glu Asp

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      225      230      235
cca gtc ctt tgt gcc ttg gca aaa aag cac aag cga acc cca gcc ctg      831
Pro Val Leu Cys Ala Leu Ala Lys Lys His Lys Arg Thr Pro Ala Leu
      240      245      250

att gcc ctg cgc tac cag ctg cag cgt ggg gtt gtg gtc ctg gcc aag      879
Ile Ala Leu Arg Tyr Gln Leu Gln Arg Gly Val Val Val Leu Ala Lys
      255      260      265

agc tac aat gag cag cgc atc aga cag aac gtg cag gtt ttt gag ttc      927
Ser Tyr Asn Glu Gln Arg Ile Arg Gln Asn Val Gln Val Phe Glu Phe
      275      280      285

cag ttg act gca gag gac atg aaa gcc ata gat ggc cta gac aga aat      975
Gln Leu Thr Ala Glu Asp Met Lys Ala Ile Asp Gly Leu Asp Arg Asn
      290      295      300

ctc cac tat ttt aac agt gat agt ttt gct agc cac cct aat tat cca      1023
Leu His Tyr Phe Asn Ser Asp Ser Phe Ala Ser His Pro Asn Tyr Pro
      305      310      315

tat tca gat gaa tat taa catggagggc ttgacctgat gtctaccaga      1071
Tyr Ser Asp Glu Tyr
      320

agccctgtgt gtggatggtg acgcagagga cgtctctatg ccggtgactg gacatatcac      1131
ctctacttaa atccgtcctg tttagcgact tcagtcaact acagctgagt ccataggcca      1191
gaaagacaat aaatttttat cattttgaaa taa      1224

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<210> 67
 <211> 323
 <212> PRT
 <213> Homo sapiens

<400> 67

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Met Asp Ser Lys His Gln Cys Val Lys Leu Asn Asp Gly His Phe Met
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Pro Val Leu Gly Phe Gly Thr Tyr Ala Pro Pro Glu Val Pro Arg Ser
      20      25      30

Lys Ala Leu Glu Val Thr Lys Leu Ala Ile Glu Ala Gly Phe Arg His
      35      40      45

Ile Asp Ser Ala His Leu Tyr Asn Asn Glu Glu Gln Val Gly Leu Ala
      50      55      60

Ile Arg Ser Lys Ile Ala Asp Gly Ser Val Lys Arg Glu Asp Ile Phe
      65      70      75      80

Tyr Thr Ser Lys Leu Trp Ser Thr Phe His Arg Pro Glu Leu Val Arg
      85      90      95

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Pro Ala Leu Glu Asn Ser Leu Lys Lys Ala Gln Leu Asp Tyr Val Asp
100 105 110

Leu Tyr Leu Ile His Ser Pro Met Ser Leu Lys Pro Gly Glu Glu Leu
115 120 125

Ser Pro Thr Asp Glu Asn Gly Lys Val Ile Phe Asp Ile Val Asp Leu
130 135 140

Cys Thr Thr Trp Glu Ala Met Glu Lys Cys Lys Asp Ala Gly Leu Ala
145 150 155 160

Lys Ser Ile Gly Val Ser Asn Phe Asn Arg Arg Gln Leu Glu Met Ile
165 170 175

Leu Asn Lys Pro Gly Leu Lys Tyr Lys Pro Val Cys Asn Gln Val Glu
180 185 190

Cys His Pro Tyr Phe Asn Arg Ser Lys Leu Leu Asp Phe Cys Lys Ser
195 200 205

Lys Asp Ile Val Leu Val Ala Tyr Ser Ala Leu Gly Ser Gln Arg Asp
210 215 220

Lys Arg Trp Val Asp Pro Asn Ser Pro Val Leu Leu Glu Asp Pro Val
225 230 235 240

Leu Cys Ala Leu Ala Lys Lys His Lys Arg Thr Pro Ala Leu Ile Ala
245 250 255

Leu Arg Tyr Gln Leu Gln Arg Gly Val Val Val Leu Ala Lys Ser Tyr
260 265 270

Asn Glu Gln Arg Ile Arg Gln Asn Val Gln Val Phe Glu Phe Gln Leu
275 280 285

Thr Ala Glu Asp Met Lys Ala Ile Asp Gly Leu Asp Arg Asn Leu His
290 295 300

Tyr Phe Asn Ser Asp Ser Phe Ala Ser His Pro Asn Tyr Pro Tyr Ser
305 310 315 320

Asp Glu Tyr

<210> 68
<211> 1715

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aaaa 1715

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<210> 69
<211> 184
<212> PRT
<213> Homo sapiens

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<400> 69
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1           5           10          15

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Arg Lys Asp His Pro Phe Gly Phe Val Ala Val Pro Thr Lys Asn Pro
20           25           30

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```

Asp Gly Thr Met Asn Leu Met Asn Trp Glu Cys Ala Ile Pro Gly Lys
35           40           45

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```

Lys Gly Thr Pro Trp Glu Gly Gly Leu Phe Lys Leu Arg Met Leu Phe
50           55           60

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```

Lys Asp Asp Tyr Pro Ser Ser Pro Pro Lys Cys Lys Phe Glu Pro Pro
65           70           75           80

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Leu Phe His Pro Asn Val Tyr Pro Ser Gly Thr Val Cys Leu Ser Ile
85 90 95

Leu Glu Glu Asp Lys Asp Trp Arg Pro Ala Ile Thr Ile Lys Gln Ile
100 105 110

Leu Leu Gly Ile Gln Glu Leu Leu Asn Glu Pro Asn Ile Gln Asp Pro
115 120 125

Ala Gln Ala Glu Ala Tyr Thr Ile Tyr Trp Leu Val Ala Ala Leu Ala
130 135 140

Pro Leu Val Ala Ala Pro Pro Arg Pro Ser Gln Gly Arg Leu Ala Gly
145 150 155 160

Arg Glu Trp Ser Thr Gln Ala His Pro Arg Asp Ser Gln Gly Pro Arg
165 170 175

Leu Cys Gly Glu Gly Arg Gly Ala
180

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<211> 1327
<212> DNA
<213> Homo sapiens

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<222> (100)..(966)

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cgggacgcgc tgggaccggc gtcgggggtc gcggggacc atg cag cgg agg tgg 114
Met Gln Arg Arg Trp
1 5

gtc ttc gtg ctg ctc gac gtg ctg tgc tta ctg gtc gcc tcc ctg ccc 162
Val Phe Val Leu Leu Asp Val Leu Cys Leu Leu Val Ala Ser Leu Pro
10 15 20

ttc gct atc ctg acg ctg gtg aac gcc ccg tac aag cga gga ttt tac 210
Phe Ala Ile Leu Thr Leu Val Asn Ala Pro Tyr Lys Arg Gly Phe Tyr
25 30 35

tgc ggg gat gac tcc atc cgg tac ccc tac cgt cca gat acc atc acc 258
Cys Gly Asp Asp Ser Ile Arg Tyr Pro Tyr Arg Pro Asp Thr Ile Thr
40 45 50

cac ggg ctc atg gct ggg gtc acc atc acg gcc acc gtc atc ctt gtc 306
His Gly Leu Met Ala Gly Val Thr Ile Thr Ala Thr Val Ile Leu Val
55 60 65

tcg gcc ggg gaa gcc tac ctg gtg tac aca gac cgg ctc tat tct cgc 354
Page 151

Ser 70	Ala	Gly	Glu	Ala	Tyr 75	Leu	Val	Tyr	Thr	Asp 80	Arg	Leu	Tyr	Ser	Arg 85	
tcg	gac	ttc	aac	aac	tac	gtg	gct	gct	gta	tac	aag	gtg	ctg	ggg	acc	402
Ser	Asp	Phe	Asn	Asn	Tyr	Val	Ala	Ala	Val	Tyr	Lys	Val	Leu	Gly	Thr	
				90					95					100		
ttc	ctg	ttt	ggg	gct	gcc	gtg	agc	cag	tct	ctg	aca	gac	ctg	gcc	aag	450
Phe	Leu	Phe	Gly	Ala	Ala	Val	Ser	Gln	Ser	Leu	Thr	Asp	Leu	Ala	Lys	
			105					110					115			
tac	atg	att	ggg	cgt	ctg	agg	ccc	aac	ttc	cta	gcc	gtc	tgc	gac	ccc	498
Tyr	Met	Ile	Gly	Arg	Leu	Arg	Pro	Asn	Phe	Leu	Ala	Val	Cys	Asp	Pro	
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Tyr Val Gly Tyr Thr Arg Val Ser Asp Tyr Lys His His Trp Ser Asp
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